ROCK ISLAND PRESERVATION COMMISSION

NOMINATION FOR LANDMARK DESIGNATION

Common Street Address of Property

201 5 St

Name and Address of Property Owner(s)

City of Rock Island

Is Owner Aware of Proposed Designation: ✓ Yes No

Please attach a short report setting forth the reasons for requesting designation. Please refer to the criteria listed on the reverse side. (These are excerpted from the Rock Island Preservation Ordinance.) A list of other details you should attempt to provide in the nomination report is attached.

Please also attach the following: STATED AT CITY COUNCIL meeting in Jan Bridge Mgr. has been told.

1. Legal description of property (available from abstract or County Recorder of Deeds office).
   Most recently filed deed must be attached.
2. One photograph of each elevation (side) of the property being nominated. Copies of old photographs or drawings may also be included.

3. Sources used to write the report

Name(s) and Address(es of Applicant(s):

DIANE OESTREICH
Name

816-22 Street
Address

Diane Oestreich
Signature

788-1845
Phone Number

Return Nomination Form To:

City of Rock Island
Planning and Redevelopment Division
1528 Third Avenue
Rock Island, Illinois 61201

****

OFFICE USE ONLY Case # 99-1 Date February 15, 1999 Time 12:08 p.m.

Nomination for Landmark Designation

Name of Property: Centennial Bridge Commission Building

Address: 201 15th Street, Rock Island, Illinois (Parcel RI 5119-1)

3. **Ownership:** City of Rock Island

Period of Significance: 1941

5. **Summary of applicable nomination criteria (categories from Rock Island Preservation Ordinance):**

(2) Associated with an important person or event in national, state or local history.
The Centennial Bridge and Bridge Commission Building are associated directly with Mayor Robert P. Galbraith who was responsible major public improvements during his first term of office and who has made an indelible imprint on the City of Rock Island.
The Centennial Bridge and its associated Bridge Commission Building also represent a unique series of events in our city. The Centennial Bridge was the first four-lane span to cross the Mississippi River. It resulted solely from efforts of the City of Rock Island and was entirely financed with private capital through the use of revenue bonds.

(3) Representative of the distinguishing characteristics of an architectural and/or landscape type inherently valuable for the study of a period, style, craftsmanship, method of construction or use of indigenous materials and which retains a high degree of integrity.
The Bridge Commission Building is unique in style, size and integrity in Rock Island. It is representative of the Art Moderne style, and retains a very high degree of integrity.

(4) Notable work of a master builder, designer, architect or artist whose individual genius has influenced an era.
The firm of (Ash), Howard, Needles, Tammen, & Bergendoff is, and was at the time, nationally known for work throughout the country.

Sam Weisman, the contractor, who constructed the Bridge Commission Building, is also of local importance.

(5) Identifiable as an established and familiar visual feature in the community owing to its unique location or physical characteristics.
The Bridge Commission Building is located in a highly visible spot directly across from Courthouse Square as well as at the foot of the Centennial Bridge at an entry to the both the City of Rock Island and the State of Illinois.

6. **Legal Description:**

Sub Lots Six (6) and Seven (7) in Lot Eight (8) in Block Twelve (12) in that part of the City of Rock Island known as and called The Old Town, as shown by the Plat thereof recorded in the Recorder's Office of Rock Island County, Illinois, in book S of Deeds at Page 48, and also as shown by Assessor's Plat of Out Lots and Sub Lots to said City of Rock Island, for the year 1864.

7. **Application Prepared by:**

Diane Oestreich
For the Rock Island Preservation Society

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PART I - DESCRIPTION

Historical Background:
The Centennial Bridge Commission Building is located in what would have been the historic village of Stephenson, across the street from Courthouse Square. Although the competing villages of Stephenson and Farnhamsburg (near 30th Street at the Mississippi) grew up concurrently, Stephenson ended up changing its name to Rock Island in 1841, and ultimately absorbing Farnhamsburg (Ref. 1).

As that historic downtown grew, the riverfront, paralleled by First Avenue (then called Mississippi Street), was largely taken up with levees, where steamboats landed, as well as the many railroad tracks that were responsible for Rock Island's prosperity. Although a few commercial and residential uses were located on the south side of First Avenue, the commercial and business center primarily extended along Illinois Street, later called Second Avenue (Ref. 2, 3, 4).

The Second Avenue near 15th Street that existed prior to the construction of the Centennial Bridge was quite different than that we recognize today. Two, three, and four story buildings, likely dating from 1860 – 1890, lined the street. A large post office/federal building was located at the southwest corner of Second Avenue and 16th Street. A pre-1910 postcard shows a street view of Second Avenue, probably taken from the top of the courthouse (Fig.1). The post office shown here was replaced around 1910 by a larger, more imposing federal building. That second federal building was demolished in the 1950s and replaced by a parking lot (Ref. 5).

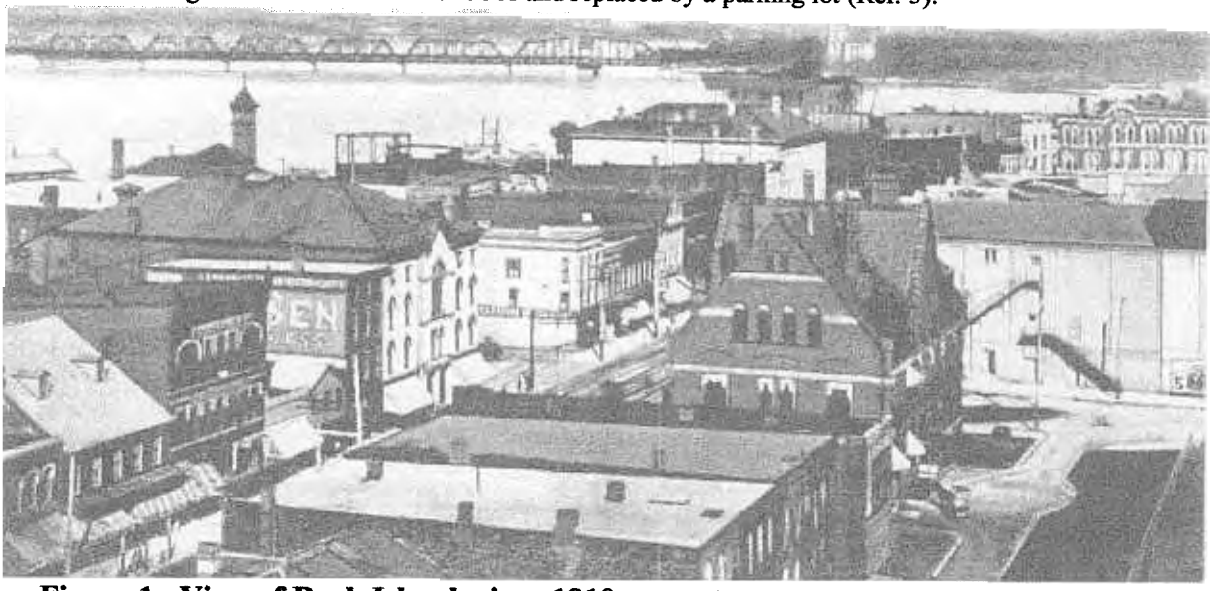

Figure 1. View of Rock Island, circa 1910. Second Avenue runs from the lower left toward the right. The large Romanesque building to the lower right is the old post office. Fifteenth Street is just off the picture at the bottom. (Ref. 6)

Equally impressive buildings occupied two other corners of this block. At the northeast corner of 15th Street and 3rd Avenue, stood the Romanesque inspired Memorial Christian Church, with a home occupied by its pastor just to the north along 15th Street. In 1877, 15th Street appeared to have houses facing the courthouse (Ref. 3). Later city directories list both businesses and residences. These smaller buildings were later replaced – the pastor's home by an annex to the church (circa 1946), and the smaller homes and businesses by the County Jail (circa 1924). The County Jail building was demolished in the 1980s and was replaced by an expansion of the Royal Neighbors of America (RNA) parking lot. A huge home on the northwest corner of 16th Street and 3rd Avenue housed the Rock Island Club. That building was later sold to the RNA, who used it as their home office. The current RNA building, built circa 1928 replaced that earlier structure (Ref. 5).

The fourth corner of the block, the present location of the Centennial Bridge Commission Building, was occupied by a two story commercial building with three storefronts (Refs. 5, 7), visible at the far right of Figure 2. Until it was demolished -- it was purchased for $10,000 in 1939 (Ref. 8) -- to build the Bridge Commission Building, the corner building was occupied by a tavern and a barber, and, temporarily, the Rock Island Police Department when

the "new" city hall was under construction. The three-story building to the immediate east was also demolished when the Bridge Commission Building was built; however a one-story structure was built on that lot a few years later. It was first occupied by Duncan Liquors and later by "The Old Shoe", a tavern which is a source of local nostalgia. The tavern had moved there from its earlier location on 17th Street facing Market Square. Reportedly there was not enough clearance for someone to even walk between the two buildings (Ref. 9). Over the years, RNA acquired all of the properties to the east of the Bridge Commission Building. City directories show them as being used for warehouses by that company until they were ultimately demolished, generally in the 1980s (Ref. 5).

Figure 2. Looking East on Second Avenue from 14th Street (Ref. 7)

Across the street, on the north side of Second Avenue, the overall appearance was generally the same – multistory buildings with a variety of uses, from saloons to restaurants to cigar stores. Hyman's Furniture Company maintained their showrooms at 1517-19 Second Avenue. Above the storefronts, there were halls such as the Lady Eagles used, as well as residences. (Ref. 5) Although the northeast corner of 15th Street and Second Avenue was cleared for the bridge construction, the remainder of the north side of the street continued in commercial/residential use. Finally, when the bridge access from First Avenue was reconfigured, circa 1960, the remaining buildings were demolished.

Centennial Bridge Site Selection:
In the 1930s, the idea of a new crossing for the Mississippi between Davenport and Rock Island was proposed. At that time, the nickel ferry and the government (arsenal) bridge provided the only transportation between these two cities. Serious consideration was given to constructing a tunnel from the foot of 18th Street in Rock Island to the foot of Brady Street in Davenport, and a joint "bridge or tunnel" commission was formed. When Rock Island Mayor Robert P. Galbraith was elected for the first time in the spring of 1937, one of the major planks in his platform was to build a better means of transportation between Rock Island and Davenport. However when he contacted this commission (which had apparently already given up the concept of a tunnel), he was informed that there was no possibility of financing a bridge without federal intervention (Ref. 8).

While the mayor tactfully did not state in his published summary that the Iowa side would not agree to assist with any financing, he did note that he proceeded on his own to find alternate financing for a bridge. After many trips to New York and Chicago as well as Washington, DC (in a futile search for WPA (Works Progress Administration) funding), as well as trips to Kansas City for concept planning for the bridge, he was finally able to present a complete program of financing using the relatively new system of selling revenue bonds for bridge construction.

His research also resulted in the hiring of a Kansas City engineering firm – Ash, Howard, Needles & Tammen -- to design a new bridge (Ref. 8).

> Note: On the bronze plaque mounted on the bridge, as well as in an advertisement in the commemorative edition of *The Argus*, the firm's name appears as Ash, Howard, Needles & Tammen. However in the advertisement, the list of partners' names does not mention Ash and lists Ruben N. Bergendoff instead (Ref.8). Only a year later, the plaque on the Bridge Commission Building lists the firm as Howard, Needles, Tammen & Bergendoff. Currently the firm is called **HNTB, Architects, Engineers & Planners**, although none of the original principals remain. The abbreviated form HNTB will be used in this document.

According to Clifford Missman Enoch R. Needles, a principal of HNTB, did the actual site selection. Missman was a young engineer employed by the firm of C. K. Willett of Dixon, IL, when it was hired to do a land survey on the Illinois side of the river from 14th to 20th Streets in Rock Island. That topological survey mapped existing buildings, utilities, railroad tracks, etc. Another firm did a similar survey on the Davenport side. Although Missman said he expected the bridge would have been built in the same location as the proposed tunnel, Needles, on the basis of the survey, selected the 15th Street location (Ref. 10). According to the newspapers, the selected location in Davenport was at the foot of Western Avenue, over one block east of the current location. The City of Davenport, however, insisted on a Gaines Street location, which added $40,000 to the bridge cost (Ref. 8).

Centennial Bridge Construction:

The design and construction of the bridge are credited to the firm of HNTB as a whole, not an individual engineer. This was and still remains the firm's custom (Ref. 11). However according to newspaper articles at the time, R. N. Bergendoff directed the efforts, while William Schmidt was the resident engineer who did the daily supervision. Bergendoff had connections to Rock Island, as his brother was Dr. Conrad Bergendoff, president of Augustana College (Ref. 8). A technical journal of the period listed Ned L. Ashton *(sic)* as chief designer (Ref. 12). Iowa City based Edward (Ned) Ashton had degrees in both hydraulics and structural engineering from the University of Iowa, and he was widely regarded as one of the most distinguished bridge builders in Iowa (Ref. 13).

On March 6, 1939, ceremonies marked the beginning of work on the river. A photo (Fig. 3) shows the approach on the Illinois side before actual construction was begun but after the demolition had begun. Details of the bridge engineering, which is called "tied arch", are attached as Appendix A. The bridge was officially dedicated at a three-day celebration beginning on July 11, 1940. A special "Progress Edition" of *The Argus* on July 10 marked the opening. A photo of the bridge nearly complete is shown in Figure 4.

Figure 3. Demolition on Second Avenue for Bridge Construction (15th Street is at left)

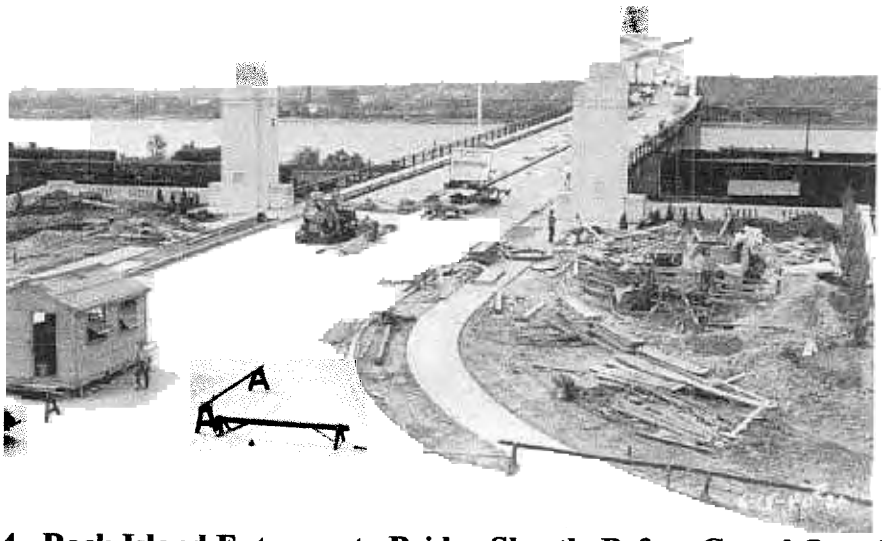

Figure 4. Rock Island Entrance to Bridge Shortly Before Grand Opening

No major changes were made in the bridge until 1960, when the bridge approaches from First Avenue were added. At that time, the waterfalls with their fountains were slightly rotated to fit within the available space (originally they had run parallel to the bridge). Tollbooths on the outside lanes were also eliminated at some time, replaced by automatic coin counters, and pedestrian tollgates were eliminated. Additional information on the bridge history is attached as Appendices B and C. Recently a complete rebuilding of the bridge deck was done, once again under the direction of HNTB (Ref. 9).

Centennial Bridge Commission Established

In early January of 1940, the City Council adopted the ordinance that established the Bridge Commission and then appointed the first commission (See list on Page 9). Initial terms ranged from three to 12 years. The first Bridge Commissioner was named soon thereafter. The current Centennial Bridge Commission retains the same organization – a five-member commission, appointed by the Mayor with the approval of the City Council. The five members include the Mayor ex officio, while the Bridge Superintendent serves as the non-voting secretary. Both the initial commission and succeeding ones have been composed of individuals who bring special skills to their volunteer position. Professions such as law, finance, real estate, construction have all been and continue to be represented on the commission. Current appointments are for 4-year terms. The commission meets monthly to make policy, leaving the day-to-day administration of the bridge to the full time superintendent. (Refs. 8, 9) It is noteworthy that employees of the Bridge Commission perform all regular bridge maintenance – from grass mowing to snowplowing.

Centennial Bridge Commission Building Construction:

The 1940 year-end edition of *The Argus* repeated key details of the bridge construction and dedication, and also noted that a contract had been awarded to Weisman Construction Company of Rock Island, for construction of a Bridge Commission Building. The contract was for $16,993, which was to include $2,500 for a truck, office equipment, and a snowplow. A drawing of the proposed building was also included (Fig. 5) (Ref. 14). Although the drawing is termed an "architect's sketch", no architect is identified. The building appears much like it does today, except the windows are depicted as 1/1 double hung.

In the subsequent year-end *Argus* edition of 1941, a photo of the "new" Bridge Commission Building appeared (Fig. 6), along with a notation that it was occupied in May 1941, and that it cost $18,000, which included two trucks (Ref. 15). Interestingly, the windows in the photograph are not of the same design as those shown in the drawing of the previous year. Note, too, the awnings. Scars from their attachments remain today. Again, no mention of architect or designer was made. A review of *The Argus* for May, 1941, provided no details of the Bridge Commission occupying the building.

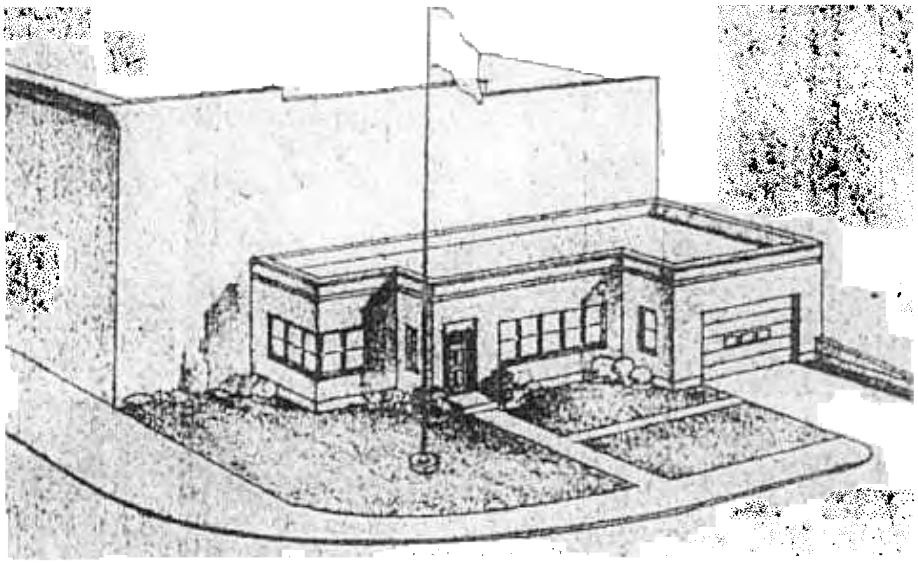

Figure 5. Drawing of Bridge Commission Building in *Argus*, 1940

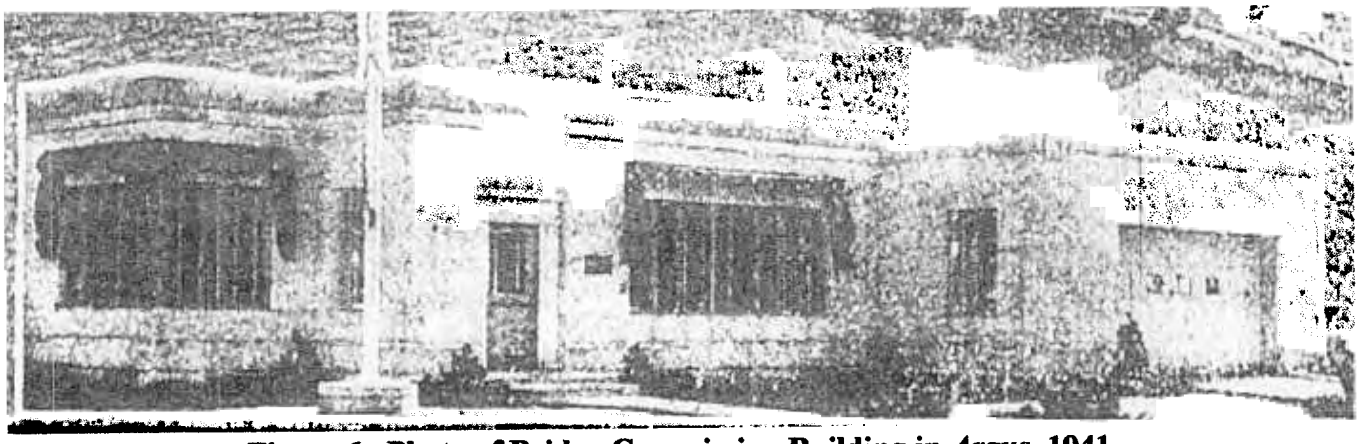

Figure 6. Photo of Bridge Commission Building in *Argus*, 1941

No plans for the Bridge Commission Building have ever been found, although the Bridge Commission owns an original (and fragile) set of plans for the bridge itself. When HNTB were recently involved in the deck reconstruction, queries were made to them about plans for the Commission Building, to no avail (Ref. 9). Since the firm has moved several times, any plans that did exist may have been discarded. For a firm accustomed to such large projects as bridges, plans for a small building may not have seemed important enough to retain.

A photograph of the Commission Building dated 1940 (Fig. 7) shows it appearing much as it does today. Notice the dotted lines outlining a rectangle above the roof. This is believed to represent a sign which was added to the building after 1940 and which was removed between 1960 and 1980 (Ref. 9). Figure 8 is an enlargement showing the windows. Before the present windows were added in 1993, there was a sliding storm window arrangement on the inside of the building. However these were in poor condition and largely non-functioning (Ref. 9). Awnings are not shown here, perhaps having been removed for the season. Figure 9 shows the building in 1960 with the sign in place and awnings extended.

Figure 7. Bridge Commission Building Photo dated 1940 (County Jail to far right)

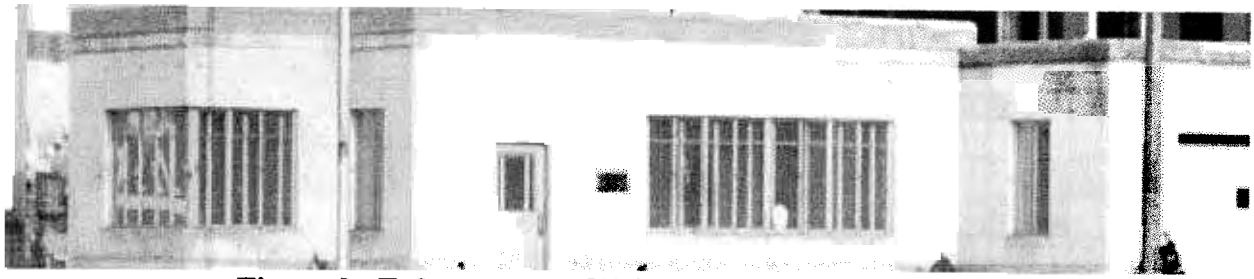

Figure 8. Enlargement of Windows in 1940 Photo

Figure 9. 1960 Photo Showing Rooftop Sign

Bridge Commission Building Description:
The building is composed of three flat-roofed "boxes", the box to the north being a conference room, the middle box serving as the main office and entrance hall, while the south box was designed as a garage and maintenance area (Fig. 10). It is constructed of concrete block with steel roof joists. The roof is essentially flat with a parapet edge. The exterior walls are surfaced with a hard white stone, probably Bedford limestone -- like the bridge entrance pylons (Ref. 8) -- with very tight joints. The main decorative elements, besides the window and entrance openings, are the two parallel horizontal recessed lines near the top of the parapet wall. This echoes a similar feature on the bridge pylons. At the garage, there is only one recessed line, as the parapet and roof are lower. Three of the exterior building surfaces are faced with the limestone; the east side has a buff brick surface, which has been covered with a painted mural of the bridge (Fig.11). The brick wall was not designed to be seen, probably because an adjacent building was planned. Fortunately, however, its appearance is compatible with the limestone now that the adjacent building has been demolished.

Figure 10. Bridge Commission Building Showing North and West Sides

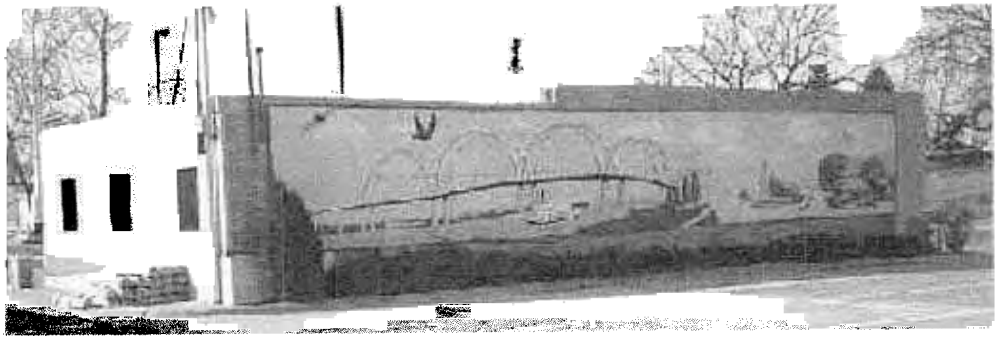

Figure 11. Bridge Commission Building showing East and South Sides

Although the current windows are a replacement, they are inserted in the original openings and, as a result, the massing and sense of proportion of the building is unchanged. These windows have a fixed-pane in the top 2/3rds and an inward opening "hopper" in the lower third. It may be argued that the current windows, except for their dark color, more closely represent what the architect intended than those sliding or casement windows that were initially installed. The window that wraps around the northwest corner in the conference room area is a major feature of the building, both inside and out. The garage wall on the south has three smaller windows, whose sills are one block higher than the other windows. This was necessary because the land to the south originally sloped upward from the street, and a full-length window at the far east would have been nearly at ground level. The land was graded lower when the jail was demolished and the parking lot extended. The darker stepped area shown on Figure 11 indicates where the grading took place.

The front door was changed sometime prior to 1980 (Ref. 9). The original door shown in Figure 8 had a single pane of glass in the upper half. The current door, shown in Figure 12, is dark metal with two glass panes, up and down. The original door surround is wood and features two square fluted pilasters with unornamented capitals and bases, and a triglyph detail bridging the two. Originally the door surround was a light color; currently it has been

painted a dark brownish-black, which complements the current windows and door. Above the doorframe is a large stone with a recessed Greek key design at the bottom and "Rock Island Centennial Bridge Commission" incised above. The bronze plaque to the south of the front door reads:

Rock Island Centennial Bridge Commission
Robert P. Galbraith, Mayor
William J. Goodell, Chairman
Roy A. Miller, Vice Chairman
Franklin F. Wingard
Frank S. Brough
Keith Poffenbarger, Secretary and Superintendent
Howard, Needles, Tammen & Bergendoff, Consulting Engineers

The garage door is also a later replacement, again painted a darker color than the original but occupying the same opening as the original.

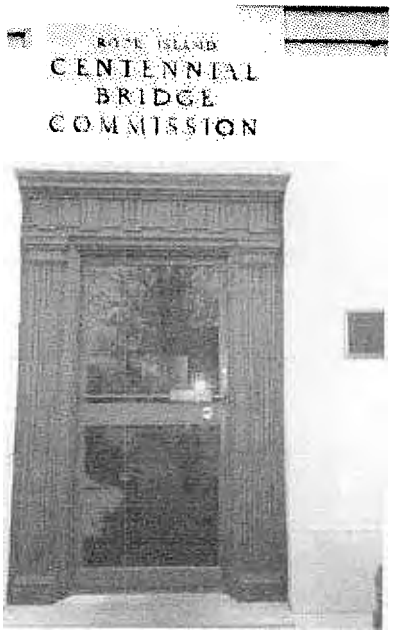

Figure 12. Entrance to Centennial Bridge Building

Figure 13 shows the floor plan of the building, not to scale. The front door opens onto a small entrance hall. Originally only a counter separated this entrance from the main office area to the south. For security, this has been fully enclosed with a window above the counter as well as an added door (Fig. 14) (Ref. 9). Beyond the entrance is the main office, which is brightly lit by the windows on the west side. Beside the "new" office door on the north is a door that opens into the large conference room (Fig. 15), which features the north and west corner windows previously mentioned. The walls in the conference room, as well as the rest of the interior of the building, have been covered with a quality walnut paneling sometime before 1980 (Ref. 9). At that time, the interior doors were also grained to match. Ceilings are covered with a modern hanging tile.

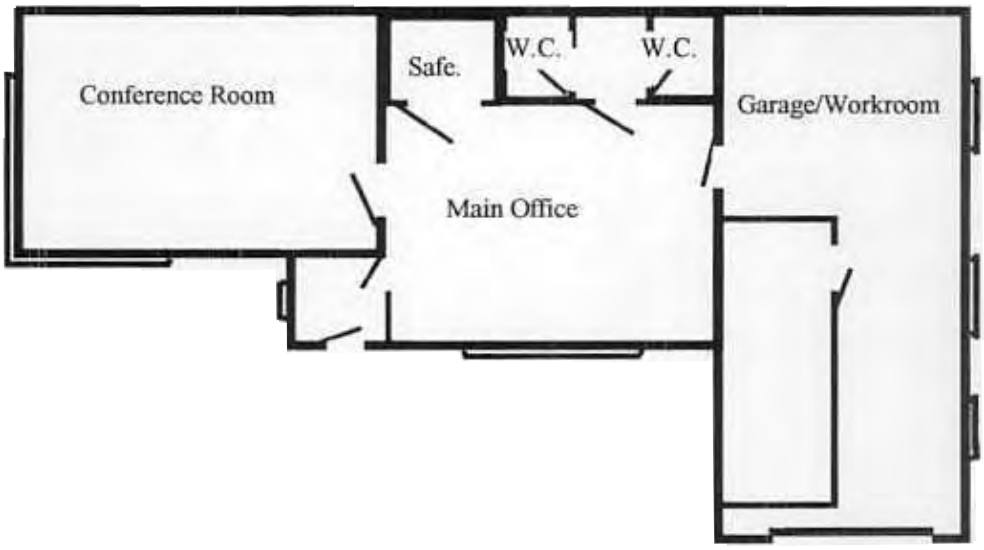

Figure 13. Floor Plan (not to Scale)

Figure 14. From Office Looking North into Entrance Hall

Figure 15. From Office Looking North into Conference Room

A walk-in Mosler safe is located at the northeast corner of the main office (Fig. 16). This was presumably intended for storing the bridge revenue, although it is large enough to store many weeks worth of the dimes collected in the early days. Currently it is used for record storage. To the south of the safe are two small restrooms. The small hallway between restrooms holds newer minimal kitchen equipment. On the south wall, a door (Fig. 17) opens to the garage/maintenance building, which is one step down from the office.

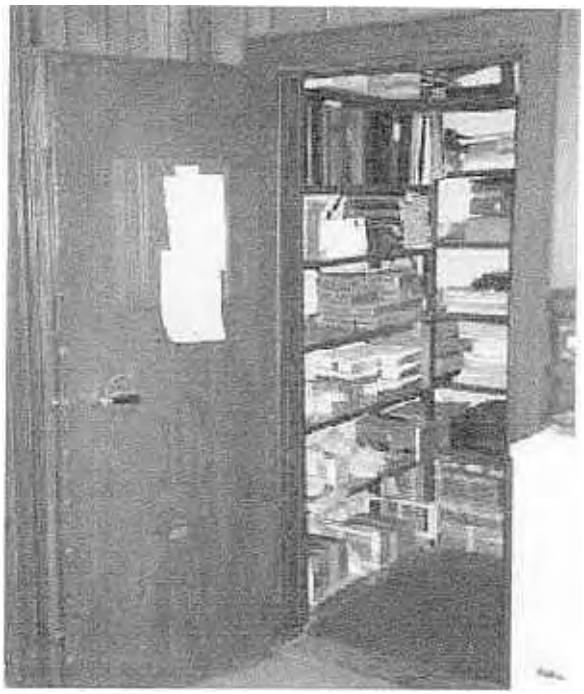

Figure 16. Looking into Safe from Office

Figure 17. Door from Main Office to Garage

The mechanicals – water heater and furnace – are located on the east wall of the garage area. Adjacent to them but farther to the south are workbenches, which were used for maintenance of bridge vehicles before a new maintenance garage was built under the bridge. A concrete block room has been built against the north wall of the garage (Fig. 18). This was intended for secure storage, since many people had access to the garage at the time. It could be easily removed. Within this room are the original (and still used) electrical controls and timers (Fig. 19) for the fountain and waterfalls that are located in front of the bridge pylons. Water level for these features is controlled from the maintenance area beneath the bridge (Ref. 9).

Figure 18. Storeroom added to North Wall of Garage

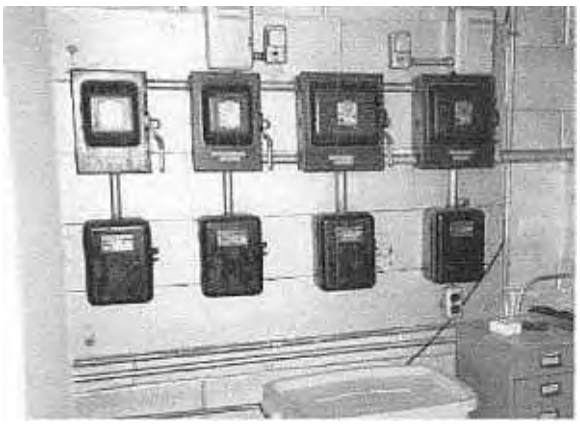

Figure 19. Fountain/Waterfall Controls on North Wall of Garage

PART II – SIGNIFICANCE

Associated with an important person or event in national, state or local history.

The events surrounding the construction of the Centennial Bridge and its associated Centennial Bridge Commission Building represent a period of history in Rock Island when the seemingly impossible could still happen. The bridge was the first four-lane span to cross the Mississippi River anywhere. It resulted solely from efforts of the City of Rock Island, led by Mayor Robert P. Galbraith, and was entirely financed with private capital through the use of revenue bonds. As such, the Centennial Bridge and Bridge Commission Building represent a unique initiative by our city. The celebrations accompanying the grand opening of the bridge attracted crowds that resulted in unprecedented traffic, according to the police department (Refs. 16, 17).

A special "Progress Edition" of *The Argus* on July 10, 1940, marked the opening. The bridge was remarked as especially noteworthy for the following achievements (Ref. 8):

- the first four-lane bridge across the Mississippi
- one of the few major bridges built in recent years without federal PWA aid
- financed entirely with private capital using revenue bonds, not taxpayer obligation
- a "splendid example" of the uncommon "tied arch" method of construction (see Appendix A for engineering details)
- equipped with "golden" sodium vapor lights as a safety feature
- cost $500,000 LESS than had been predicted

The Centennial Bridge and its associated Centennial Bridge Commission Building are also significant because of their association with visionary leader, Mayor Robert P. Galbraith. Galbraith led Rock Island's bridgebuilding efforts after a bi-state attempt to construct a bridge was rejected by Davenport. He pioneered what was a relatively new method of civic financing – revenue bonds – to finance the bridge. At the opening of the bridge, an editorial in *The Argus* said, "....the completed bridge largely symbolizes a 1-man victory...." in its references to Mayor Galbraith (Ref. 8).

During his first term of office (1937-1940), Galbraith was credited for 8 million dollars in public improvements, including sewer expansion, waterworks expansion, street improvements and government-sponsored housing as well as the Centennial Bridge. Among the projects listed in *The Argus* as completed or nearly completed in the few years before 1940 and under Galbraith's leadership are (Ref. 8):

Centennial Bridge	$2.500,000
Sewers & Sewage Treatment Project	3,000,000
Waterwork Improvement & Extensions	615,000
Municipal Building (City Hall)	275,000
Eleventh Street Paving	163,000
Fourteenth Avenue Paving	80,000
Second Avenue Paving	57,825
Thirty-eighth Street Paving	45,000
Seventeenth Street Paving	30,000
Fifteenth Street Paving	24,367
Removal of Street Car Rails, 80 blocks of WPA Paving and 1million feet of WPA sidewalks	694,788
300 Homes Approved by U.S. Housing Authority	(incomplete)
Seawall and Milan Bridge	(assured by state for 1940)

The "300 Homes" reference meant the 305-unit Arsenal Courts housing project, which was owned by the city. Later during the course of World War II and in Galbraith's second term, a second temporary housing project, Victory Homes, was built near 9th Street at 31st Avenue (Refs. 18, 19).

The mayor was also a modest man. During its construction years, the bridge was known as the "Galbraith Bridge. Only two months before the grand opening, Mayor Galbraith declined the honor for the bridge to be named after him, and further requested it be named in honor of the Centennial of Rock Island, which to be celebrated the subsequent year. His wish was granted (Refs. 8, 18).

Galbraith also has a claim to fame as one who pioneered the local appreciation for modernistic architecture. He was responsible for building three auto sales/garage buildings in Rock Island, the most noteworthy being the Art Moderne Galbraith Motor Company building, built in 1940, and still standing at 1401 4th Avenue (Fig. 20). During his administration, two other architecturally significant modernistic city buildings were also erected – Rock Island City Hall at 1528 3rd Avenue and the Rock Island Sewage Treatment Plant at 1299 Mill Street (Refs. 18, 20)

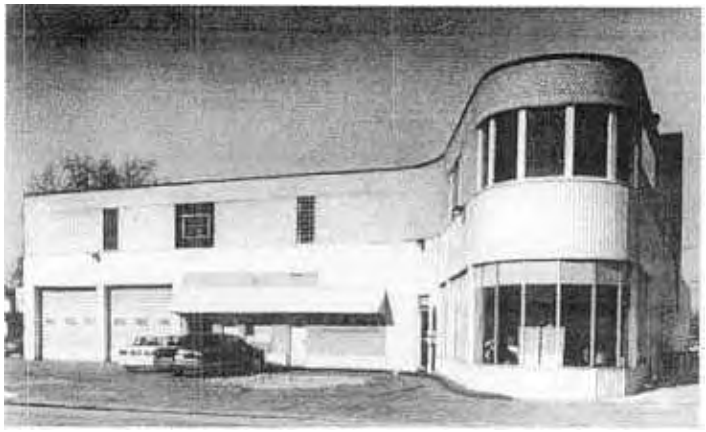

Figure 20. Galbraith Motor Company Building (Ref. 20)

Robert Paul Galbraith was born April 4, 1890, in East Park, Indiana, but moved as a young boy to Decatur, Illinois. He attended Millikin University there for two years. He moved to Rock Island in 1912, where he worked as manager of People's Loan Company in Moline and also started a used car business – the Tri-City Auto Exchange. Although automobiles started as his hobby, he turned that interest into a lifelong work, as he was connected with their sale from 1912 until 1942. His first car agency was opened in 1915—for the "Halliday". Reportedly he tried to get a Hupmobile dealership when he found out it went a lot faster (40+ mph) than his Halliday. In 1920 he obtained the dealership for Oldsmobile, and in 1925 he built a new garage and sales building on the southeast corner of 4th Avenue and 15th Street. The firm later expanded as he became the dealer for Buick, Oldsmobile, Cadillac and LaSalle autos and GMC trucks. He also built the previously mentioned Galbraith Motor Company building (Refs. 18, 20).

While he was building his business, he moved to Milan, and even became mayor there in 1927. He resigned that position a year later when he moved back to Rock Island. His long-time Rock Island home still stands at 1840 10th Street. He was elected mayor of Rock Island in 1937 and again in 1940. During his second term (1940 – 1943), his health rapidly deteriorated (some claim because of his rigorous work schedule). He had been in ill health for two years before he died in 1946 of a heart attack at the relatively young age of 56, in a Chicago hospital, with his wife by his side. He was survived by one daughter and is buried in Memorial Park Cemetery (Ref. 18).

Representative of the distinguishing characteristics of an architectural and/or landscape type inherently valuable for the study of a period, style, craftsmanship, method of construction or use of indigenous materials and which retains a high degree of integrity.

The modernistic style of architecture is a relatively new idea, whose roots are ascribed to a Parisian expo "*l'Exposition Internationale des Arts Decoratifs et Industriels Modernes.*" There were two key movements of the modernistic style -- Art Deco and Art Moderne. The Art Moderne influence is characterized by clean, angular lines, in direct contrast to the curvaceous Art Nouveau style of the turn of the century, while the Art Deco influence is seen as an extension and reinterpretation of Art Nouveau. Art Deco was a playful and colorful style that spread worldwide from its initial popularity in Paris after World War I. After 1930, the "streamline" influence affected modernistic styles. This was derived from industrial design, and was apparent in the architectural use of smooth surfaces, curved corners, as well as an overall horizontal emphasis (Ref. 20).

While the antecedents of the modernistic style are both European and American, the United States developed its own unique interpretation of modernistic architecture. Although the earliest popularity was for skyscrapers in larger cities, such as Raymond Hood's 1931 Rockefeller Center in New York City, smaller towns also built modernisitic structures such as Cervin and Stuhr's 1940 Rock Island City Hall. Certainly modernistic design was

much more popular for commercial or public buildings than for residences. Rock Island is fortunate to have several, generally smaller scaled, public or semipublic modernistic buildings (Ref. 20).

The modernistic style is usually characterized by ornament that is integral to the structure, rather than applied later. Decorative features of modernistic buildings may include such elements as streamlining, stepped back or ziggurat building shapes and elements, parallel lines and flutes, simplification of historic shapes (from buttresses to towers), as well as bows to modern technology in the art work that was frequently included as part of a modernistic structure's public space. Modernistic buildings are also frequently a light color; hence the popularity of buff brick, Bedford limestone, and light chrome or aluminum metals.

The Bridge Commission Building is unique in style, size and integrity in Rock Island. It is representative of the Art Moderne style, and retains a very high degree of integrity. The only other business building, which is comparable in size, is the Banquet Baking Company at 2011 4th Avenue (Fig. 21). However this building has had a severe compromise to its integrity by the resurfacing of the original exterior facade. Even if its integrity was intact, it is still very different in that it is designed to have only a single principal façade rather than the three that the Bridge Commission Building had and has.

Figure 21. Banquet Baking Company Building - 2011 4th Avenue

Table 1 Comparison of Some Nearby Modernistic Buildings

Building	Address	Modernistic Style/Size	Integrity
Rock Island City Hall	1528 3rd Avenue	Art Deco/2-3 story, large	excellent
Galbraith Motor Co.	1401 4th Avenue	Art Moderne (Streamline)/2 story, large	Poor, reversible
RNA Supreme Office	230 16th Street	Art Deco/3 story, large	good
Peerless Dairy	1323 Second Avenue	Art Moderne (Streamline)/2 story, large	Poor, reversible
Banquet Baking Co.	2011 4th Avenue	Art Moderne/1 story, small	Poor, hard to reverse
Bridge Commission Bldg.	*201 15th Street*	*Art Moderne/1 story, small*	*good*

Notable work of a master builder, designer, architect or artist whose individual genius has influenced an era. The Centennial Bridge Commission Building is significant for its connection with the engineering firm of HNTB as well as its association with local builder Sam Weisman.

HNTB is a firm that has significantly influenced the local, national, and even international, landscape. Following is an excerpt from "Diversity by Design", a book commissioned by HNTB in 1989 (Ref. 21):

> "In 1914, John Lyle Harrington, Ernest Emmanuel Howard, and Louis Russell Ash joined together to form the civil engineering partnership Harrington, Howard & Ash in Kansas City, Missouri. Since the founding of Harrington, Howard & Ash, the surname Howard has been carried forward in the firm's name without interruption for 75 years. Today, the "H" of HNTB stands as a symbol of permanence and of continuity with the past.
>
> "HNTB can trace its roots back as far as 1886, when maverick bridge engineer Dr. John Alexander Low Waddell opened a consulting practice in Kansas City. Waddell quickly distinguished himself in the design of railroad bridges, a specialty, which for a half century supplied a steady stream of work for the successive partnerships which evolved from Waddell's original firm. By the time that

the third successive partnership -- Harrington, Howard & Ash --- opened its doors in 1914, the firm's design boards were overflowing with work on bridges in every corner of the United States and abroad.

"Harrington, Howard & Ash could easily have remained a small but successful Kansas City firm, glorying in the heyday of American railroading, content to fade into relative obscurity with the passing of the railroad era. Destiny, and the firm's partners, however, had other plans. Between 1914 and 1989, Harrington, Howard & Ash slowly transformed itself into one of the nation's premier engineering and architectural firms: HNTB, Architects, Engineers & Planners. Today, HNTB boasts a far-flung network of 31 local design offices in 25 states across the country. Sixteen partners share responsibility for the firm's projects and internal operations. The partners are supported by an experienced staff of 40 associates and more than 2,200 technical and administrative employees. Together, HNTB's team of professionals handles more than $168 million of design work for clients annually.

"The growth of HNTB over the years has come hand-in-hand with an increased diversification of the firm's services to clients. Building on a solid reputation in bridge design, HNTB soon branched out into other pursuits. The firm's expertise in roadway design has been well established since the beginning of the modern turnpike and interstate highway eras following World War II. Airport planning and design has been a major activity at HNTB for more than 25 years. More recently, the firm has developed expertise in environmental engineering. Participation in rapid transit projects and in construction supervision also keeps HNTB staff busy.

"The most dramatic evolution in HNTB's services has been the addition of architecture to the firm's portfolio. Many engineering firms have tried -- and failed -- to integrate architecture into their practices. HNTB, however, has enjoyed tremendous success in that arena. Since the merger of the Kansas City architectural firm of Kivett & Myers with HNTB in 1975, architecture has become as increasingly important component of HNTB's business. Today architecture contributes as much as one-fourth of the firm's fee each year.

"Although three-quarters of a century have passed... ...HNTB frequently has been invited to design an upgrade or replacement for a bridge or roadway which was originally designed by the firm for a client 30, 40, or 50 years ago. .... The firm's long tradition of exceptionally high ethical and technical standards continues to be a point of great pride to partners and employees, especially as HNTB continues to grow and thrive in an increasingly competitive business environment."

Currently, HNTB claims corporate offices in "more than" 40 U.S. cities (Ref. 22), although its headquarters are still considered to be in Kansas City (Ref. 11). In 1940, HNTB had offices in both New York City and Kansas City, and was involved in the simultaneous erection of two other bridges across the Mississippi – one at Natchez and the other at Greenville, Mississippi. The firm specialized in bridge construction and, by 1940, had engaged in projects in more than half of the states as well as several foreign countries (Ref. 8). Current projects still emphasize bridge work and its associated engineering. Among those projects are a replacement bridge across the Muskingum River in the Onio River Valley that will replace a deteriorated 1914 swing-span bridge. HNTB is also providing final design for the Charles River Bridge in Boston, an "unusual cable-stayed bridge offering many technical challenges" (Ref. 22).

At the present time, HNTB also has three specialized subsidiaries (Ref. 22):

- **HNTB International**, which is currently involved in more than 30 initiatives in countries around the world, including Canada, Mexico, China, Brazil, Taiwan and Russia, and headquartered in Alexandria, Virginia
- **Thomas K. Dyer, Inc.**, a rail transportation consulting firm currently working on more than 30 railroads and rail transit systems in 45 states and 10 foreign countries, and headquartered in Lexington, Massachusetts.
- **HNTB Design/Build, Inc**. which provides full-service design, engineering and construction services for industrial, commercial and institutional facilities projects and headquartered in Irvine, California.

It is apparent that architecture, per se, was a relatively minor part of HNTB in 1940. They were still hired to design bridges, not buildings. However, at times building design was a necessary part of a larger project, in this case, that of the Centennial Bridge itself. When engineering is the primary function of an organization, oftentimes the beauty of the resultant structure is due to the fact that, as Louis Sullivan expressed, "form follows function." Thus, the simple geometry of engineering is frequently very pleasing. Yet it is also apparent, especially in the design of the Centennial Bridge pylons and the Bridge Commission Building, that HNTB also had engineers, if not architects, with a strong aesthetic sense in addition to their technical competence.

Significance under this criterion is also due to the work of local contractor, Sam Weisman, who constructed the Bridge Commission Building. Weisman was born in Berlin, Germany in 1881, where his parents operated a store. After his father's death, he moved to Russia with his mother. Unhappily, she was killed in an anti-Semitic outbreak and he began working as a railroad carpenter at age 14. He came to the United States in 1903, and worked as a carpenter on the east coast for a few years while he learned the language. In 1912, he came to Rock Island, and worked for other contractors. Only six months later, he entered into business for himself (Ref. 23).

Weisman, who died on April 29, 1948, was responsible for building many significant Rock Island structures. These include such recognized buildings as the 1927 Longview Apartments (18th Avenue at 17th Street), a locally designated landmark, and the 1948 Weisman (now Villa) apartments (1300 block of 20th Street), National Register of Historic Places Contributing Structures (Broadway Historic District) (Ref. 24). He also built two groups of brick bungalows around 1930 which have National Register potential -- the 7-home Weisman Addition in the 2900 block of 21st Avenue, and the 7 homes in the Wheelan Addition in the 2400 block of 21st Avenue (Ref. 19). Even today, when his buildings are 50 to 75 years old, they are characterized by a remarkable integrity – a testament to the quality construction for which he was recognized during his life.

Identifiable as an established and familiar visual feature in the community owing to its unique location or physical characteristics.
The location of the Bridge Commission building across from Courthouse Square has ensured its continuing visibility. Additionally, its location at the foot of the Centennial Bridge makes it an important gateway to the City of Rock Island and indeed to the State of Illinois.

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APPENDIX A

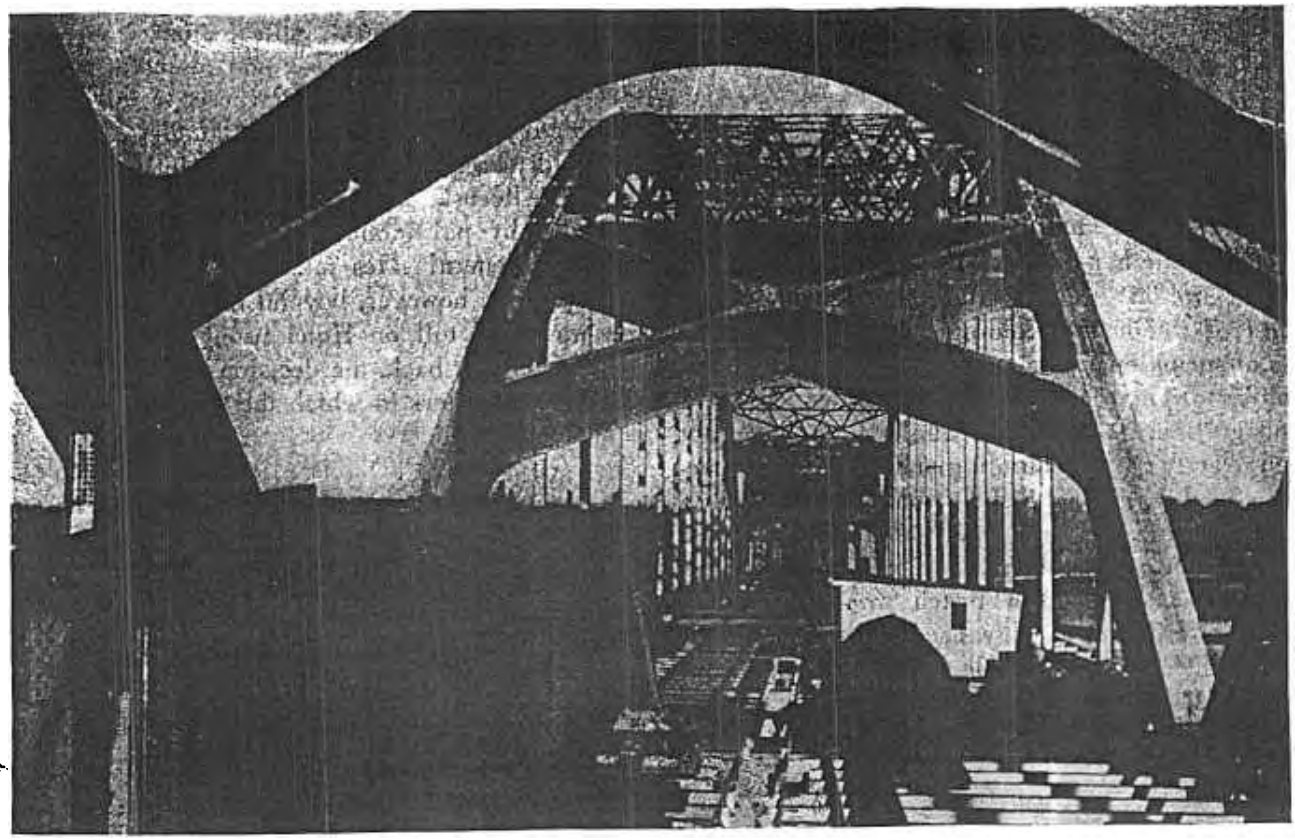

FIG. I. PLATE GIRDER PORTALS ARE DISTINCTIVE CHARACTERISTIC OF ROCK ISLAND ARCHES.

Tied Arches to Span the Mississippi

Contents in Brief—Rock Island, Ill., is building a five-span steel arch bridge, first of its type across the Mississippi River. Financed entirely by private capital, its revenue bonds will be retired by a 10c. toll on vehicles using its 22-ft. roadways. Span lengths are 395 and 540 ft. Ribs are box girders, hangers H-sections, ties are special rolled H-sections weighing 398 lb. per ft., and the shoes are of rocker bar instead of pin type. Erected on steel falsework, the spans were swung with the aid of jacking posts temporarily substituted for the hangers.

CUTTING THE NATION IN HALF as it does from Canada to the Gulf, the Mississippi River is crossed by many bridges. And the engineers responsible for these numerous crossings have over a long period of years met the varying requirements imposed by foundation, topography and traffic in such a variety of ways that one can travel from St. Paul to New Orleans and see nearly every type of long span bridge that the art has developed. Yet, despite simple trusses, cantilevers, suspension spans and steel and concrete arches, a new type of bridge will soon be added to the list, for on June 11, Rock Island, Ill. will open to traffic its steel tied arch crossing to Davenport, Iowa.

The steel tied arch is not a common type anywhere, let alone across the Mississippi where its relatively short span would normally be ruled out because of the large number of deep piers required for a long crossing. At the Rock Island site, however, a firm foundation of hard clay or shale occurs at a relatively shallow depth (50 ft. or less) into which it seemed possible to drive steel H-piles economically. As finally built, the bridge proved even more economical than contemplated since piledriving for the first pier indicated that the clay was so hard as to permit founding the remaining piers directly on it and dispensing with the piles. These good foundation conditions also satisfied another essential of tied arch construction—ability to use falsework with reasonable ease and economy. The net result is that Rock Island will have a new bridge of simple, pleasing lines which has been economical to build and is distinctive for a Mississippi River crossing.

Heavy traffic will be served

Rock Island is part of the prosperous industrial Tri-City area, which also includes Moline, Ill., and Davenport, Iowa, in a metropolitan unit that is virtually one big city. For many years the federal government bridge to Arsenal Island was the only Mississippi River crossing in the locality; its earliest predecessor,

Incidentally, is claimed to have been the first bridge that was ever built across the river. Traffic on the Arsenal Island bridge, a two-lane structure that also carries two street car tracks, reaches rush hour volume per lane as great as any bridge in the country. Several years ago the Bettendorf suspension bridge was built several miles upstream, and it is now a successful toll structure without having greatly relieved Arsenal Island bridge traffic, which still approximates 9 million vehicles annually. Traffic studies, therefore, established that another bridge, connecting directly the business sections of Rock Island and Davenport, could get enough business to support it at a 10 cent toll. Despite the favorable prospects of such a bridge, however, PWA turned down a loan-and-grant request after which the city sold all of the revenue bonds to a private banking syndicate. The financing of the Rock Island bridge, therefore, is as unique as its structural design.

Known as the Galbraith Bridge (the name of the town's mayor), the Rock Island bridge project is 4,447 ft. long between Second Ave. in Rock Island and Second St. in Davenport. Continuous plate girders spans on concrete piers resting on steel H-piles constitute the Davenport approach of 1,075 ft., which is on a 2½-deg. curve and has a maximum grade of 6 per cent. Similar construction, 511 ft. long on tangent, is used on the Rock Island and except that for a long span over the railroad tracks, a cantilever with a suspended section is introduced. The main river crossing consists of 5 tied arch spans of the following lengths from the Rock Island end—395, 540, 540, 395, 395 ft. The bridge deck accommodates two 22-ft. roadways, separated by a 2½-ft. steel center island, while a 5-ft. sidewalk is bracketed out at either side.

From a technical standpoint the bridge contains both design and erection characteristics of interest. Designers would note first the use of a steel H-section for the vital tie member. They would also be impressed by the solid box section rib, the detail of joining the tie to the rib at the pier support and the H-section hangers.

Steel erection men would be interested in the use of adjustable falsework, the handling of 45-ton erection pieces by the deck traveler, the utilization of temporary jacking posts in place of every second or third hanger to adjust the arch rib for closure, and the method of swinging the arch spans free of the falsework. Paving contractors would be interested in the curb and center island detail, which is ideal for the direct support of the finishing machine.

Foundations

Few sites on the Lower or Middle Mississippi have as good foundation conditions as are present at Rock Island. Absent is the deep and

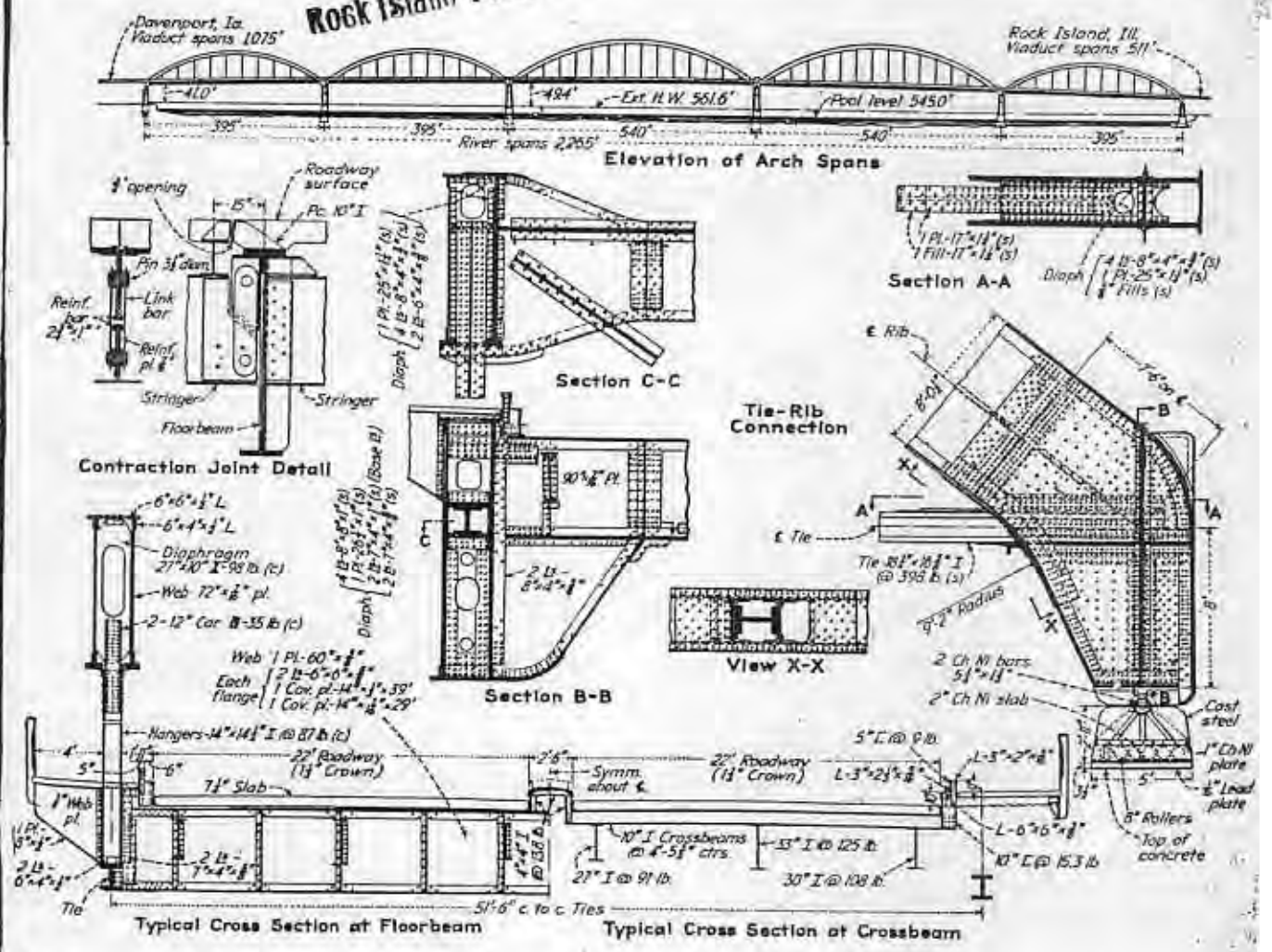

Fig. 2. Structural details of tied arches of Mississippi River bridge at Rock Island. Particularly notable are the box truss rib, the H-section tie and the connection of the two at the piers.

characteristic mud overburden; instead sand and gravel at a depth of 15 or 20 ft. overlies a hard clay shale seldom over 40 ft. below pool level. The two easterly piers for the main spans are founded on rock, a limestone, and as previously stated steel H-piles are used for only one of the four other main piers, the remainder resting directly on the shale. Single-wall sheetpile cofferdams were put down (after the use of a double-wall design on the first pier showed the single wall to be adequate). Excavated to about 20 ft. below river bottom, the cofferdams were sealed by tremie concrete and pumped out, permitting the piers to be built in the dry, using a barge plant equipped with a derrick for handling the concrete buckets.

The concrete approach bents are all on steel piles, with the footings only slightly below ground level to reduce excavation. Although the substructure is comparatively simple, a great deal of study was given the form of the piers and concrete bents to make them pleasing in appearance without any applied ornament.

Superstructure design

In utilizing the 9,000 tons of steel required for the bridge, a guiding objective was to use as many large members as possible and to eliminate small members. The choice of plate girders for the approaches and of the tied arches for the main spans was in keeping with this objective. The use of box girder ribs without lacing bars, the selection of an H-section tie instead of bars or multiple plates, the use of plate girder members for arch portals and the substitution of special rocker bars instead of the usual pins at the shoes are other examples of this attempt at simplicity.

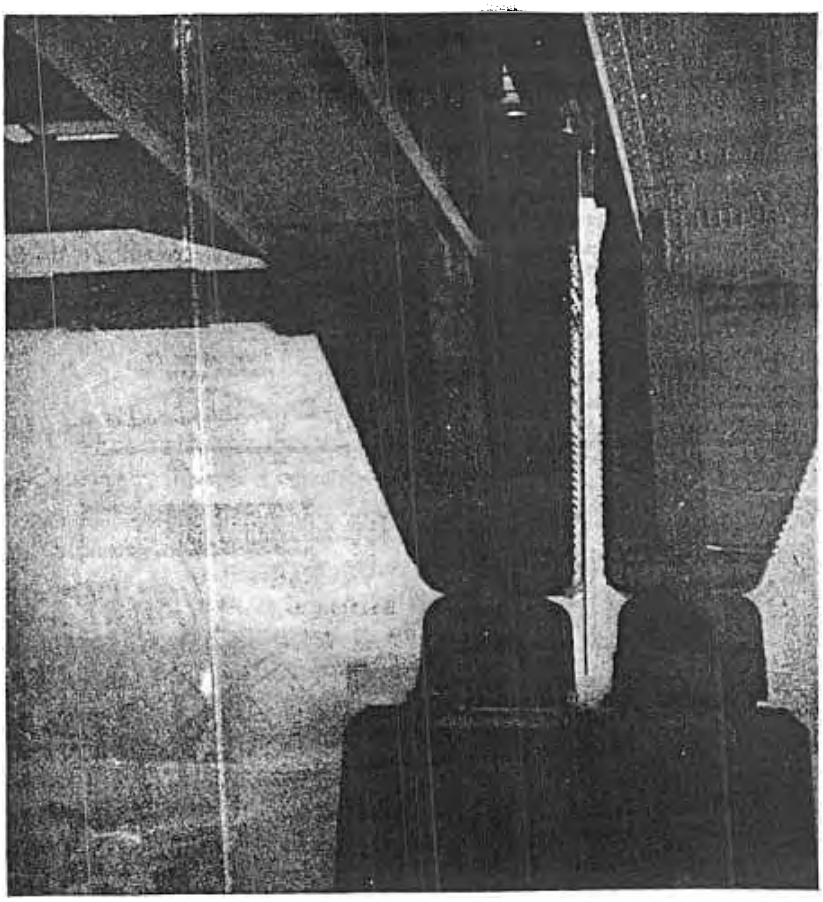

Fig. 3. Rocker bar shoes of adjacent arches; expansion shoe on rollers at left and fixed shoe at right. What appears to be a pin bearing is merely a dust plate over the rocker bars. Splice in the H-section tie is shown at upper left.

Principal interest, of course, centers in the tied arches, details of which are shown in Fig. 2. Of these details several are worth comment.

The rib is of constant section between tie connections, 27 in. wide and 8 ft. deep. In reducing the section below the tie connections to bring the ribs to bear on the shoes much study was given to its proportions so that it would blend gracefully into the lines of the piers. Diaphragms in the rib, spaced about 5 ft. apart, consist of rectangular frames made up of 6x3½x⅝-in. angles, except at hanger connection points where a 27-in. I-section is used. The H-section hangers (maximum length 94 ft.) are joined to these diaphragms by 12-in. car channels; at the bottom the hangers are connected to the floorbeams by 7x4⅝-in. angles.

Floorbeams consist of 60-in. plate girders and stringers (35.5 ft. long) of I-sections from 27 to 30 in. deep. The 7½-in. bar-truss-reinforced concrete slab is supported on 10-in. I crossbeams at 4-ft. 5⅜-in. centers. Expansion joints at the end of each arch span are of cast steel finger type, and in each span there are four contraction joints detailed as in Fig. 2. Stringers at the contraction joints are attached to the floorbeams by pinned links. A noteworthy detail is the use of a horizontal beam placed at the bottom of each end floorbeam to assist in the distribution of lateral stresses.

The tie is perhaps the most noteworthy member in the bridge, first because of its simplicity, being a single rolled H-section and second because of its size since it weighs 398 lb. per foot, and is 18¼ in. deep and 16⅝ in. wide across its flanges which are nearly 3 in. thick. Since this section is not standard, a special rolling was required for the 5,500 ft. (1,100 tons) required. At splice points, flange thickness was increased over 100 per cent by cover plates so that maximum grips for the two hundred 1¼-in. diameter rivets required at each splice were in the neighborhood of 6¼ in. The tie is supported at each hanger by four rivets. However, at the time of erection only two hangers in the 395-ft. span and three in the 540-ft. span were riveted, the remainder waiting until the bridge was under full dead load. The tie is also supported laterally against each floor beam. As shown in Fig. 2, the tie is entered between the webs of the rib and is connected to these webs by horizontal diaphragms that engage the top and bottom flanges of the tie, which are reinforced and widened at the con-

nection by means of cover plates.

Another detail of interest is the cast steel shoe, in which rocker bars are used instead of pins. These bars, of chrome nickel steel, are 5 x 1¾ in. in section and 3 ft. 4½ in. long. The contact surface of the bar in the upper half of the shoe is plane, while that of the bar in the lower half is rounded to a radius of 5 ft. 2½ in. Shoes at one end of each arch are fixed while those at the opposite end are on six 8-in.-diameter rollers moving between chrome nickel steel plates, the lower plate resting on a 3½-in. cast steel bed plate separated from the concrete of the piet by a ⅛-in. lead plate.

A final detail, also shown in Fig. 2, is the steel stepped curb. Supporting members, consisting of short channel posts, extending 10 in. above the pavement are riveted to each cross-beam and thus occur at about 4½-ft. intervals. A longitudinal angle carried on the top inside corner of this channel serves as the lower curb rail, while a vertical angle riveted to the channel post and extending 9 in. above it carries the upper rail consisting of a channel and an angle. This curb design being open at the roadway except for the channel posts permits water to drain through readily. The lower curb rail has proved ideal as a support for the concrete finishing machine during construction of the roadway slab.

Erection

Fundamentally, erection of a tied arch consists simply of building a falsework support from pier to pier, with bents at every panel point, upon which the floor members can be assembled. The hangers are then used as posts to support the arch rib as it is erected piece by piece.

All tied arch erection follows this pattern but variations may occur in the type of falsework used, in whether each panel is erected complete at once or the entire floor system is laid down before rib erection is commenced, and principally in closure procedure the details of which depend largely on whether tie or rib is closed last.

On the Rock Island bridge, the spans were erected panel by panel and closure was made in the arch rib, tie splices being riveted up as erection progressed. Work began at the Davenport (west) end of the bridge, where the material yard was located, and proceeded eastward.

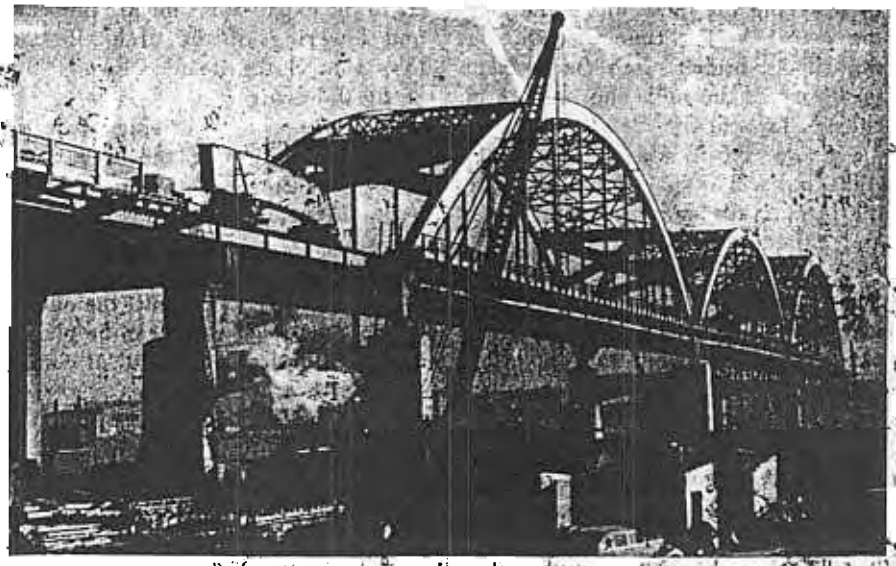

Fig. 4. With three arches complete, first section of rib for fourth arch has just been raised from material yard to a push car on the deck. A gas locomotive will move it out to the erection traveler.

First operation was erection with a crawler crane of the first approach girder span next to the river. On this a 65-ton deck traveler with 105-ft. boom was assembled in position to start work on the first arch. Falsework of steel H-piles, with adjustable top sections, was placed by a derrick boat which also erected all floor steel and the arch tie. The traveler then moved out on this completed platform and, always backing away, erected the hangers and the arch ribs in two-panel lengths which were brought out to it on push cars on the deck. Heaviest pieces lifted were the crown sections of the ribs, weighing 47 tons in the long arches and 43 tons in the shorter ones.

The key to the erection procedure was the use of special temporary jacking posts in place of some of the hangers. For the 395-ft. spans of 11 panels, jacking posts were used at points 3 and 5 in each half span; for the 540-ft. spans of 15 panels they were used at points 3 and 6 in each half span. By means of these posts the arch rib could be raised or lowered to effect connections between the various erection pieces and in the end to adjust the rib for closure and swing the arches free of the falsework. The jacks were also utilized to close the clearance at the last joints in the tie, on one or two spans some horizontal jacking at the end shoe was also required before the last tie splice could be made.

Swinging the spans

As each span is completed, it is swung free of its falsework supports

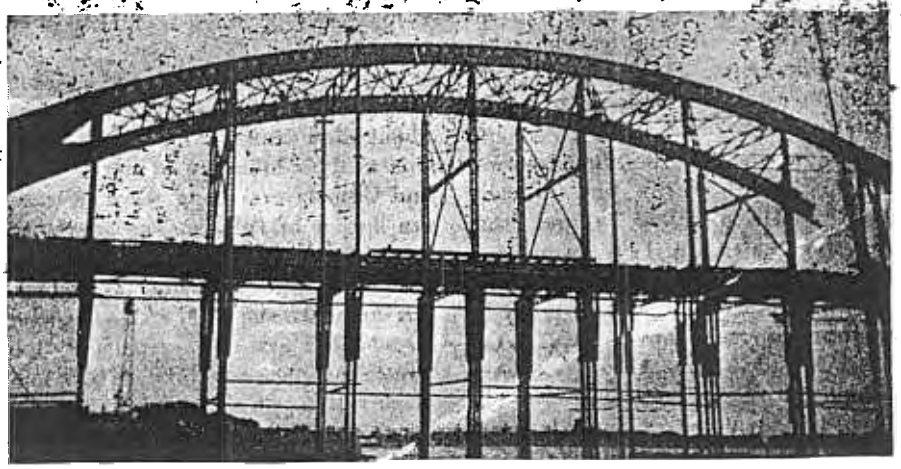

Fig. 5. One of spans approaching completion. Note the jacking posts (with sway bracing between) used temporarily in place of some of the hangers to permit adjustment and closure of the arches. Adjustable steel falsework is also shown.

by lowering the jacks under the jacking posts. At the time of swinging, the rib is higher than its ultimate position and the tie is shorter—2½ in. shorter for the 590-ft. spans and 1½ in. for the 395-ft. spans.

Taking a 395-span as an example, the 1½ in. is divided between the fixed and expansion ends of the arch in the theoretical amounts of 1 1/32 in. and 1/32 in. The anchor bolt holes having been drilled on both piers previous to steel erection, the expansion shoe is bolted down and the rollers locked; the fixed shoe is left free and set 1/32 in. inside (toward the center of the span) from its final position. As the two 100-ton jacks under each jacking post are lowered, the fixed shoe moves outward until the anchor bolts can be dropped in. During this operation the fixed shoe is raised a fraction of an inch on jacks so that it clears the concrete as it moves. With the fixed shoe in place the rollers in the expansion shoe are unlocked and lowering of the arch rib continued until the span is swung free of the falsework.

Depending upon temperature or erection conditions, the fixed shoe may stop short of the anchor bolt holes after all of the allowed-for movement has taken place. This requires that the whole span be shifted toward the fixed end until the anchor bolts of the fixed shoes can be placed. Such a situation is present, of course, only when erection begins at the expansion end of a span, which was necessary with one of the long spans on this bridge since the fixed shoes of the adjacent long spans were placed on one pier for convenience in locating the toll house.

After the closure the jacking posts were taken out one at a time and replaced by the permanent hangers, jacks on the falsework being used to make the hanger connections when necessary. As a final operation the hangers were connected to the tie at those points not previously riveted up and the tie was connected to plates extending out from the bottom of the floorbeams to give lateral support.

Personnel

The Rock Island bridge was designed and its construction is being supervised by Ash-Howard-Needles & Tammen, consulting engineers, Kansas City, Mo., under the direction of R. N. Bergendoff of that firm. Foundation contractor was the McCarthy Improvement Co., Davenport, Ia., and superstructure contractor is the American Bridge Co. Crouse & Saunders, Detroit, have the contract for the concrete deck. William Schmidt is resident engineer for the consultants, with Stephen Collins as assistant. Ned L. Ashton as chief designer and Carl S. Harper as chief draftsman were in charge of design.

Cities Move To Escape Floods

Contents in Brief—Floods and a flood control dam are the reasons why four communities in different parts of the country are moving to new sites.

WHEN THE CITIZENS of Hill, N. H.—a town of 400 population—voted recently to move their community to a new location, they followed the example set by citizens of three other communities who, within recent years, decided to relocate their towns to escape floods or aid in flood control.

Two of the towns—Shawneetown, Ill., and Leavenworth, Ind.—already have moved to higher ground from the sites which, in 1937, were covered by Ohio River floodwaters that almost completely destroyed many of their buildings. Greenville, Mo., is the other town; its present site has been designated as part of a St. Francis river flood-control reservoir system.

The citizens of Hill voted at a town meeting to relocate, and to establish a model village, after the federal government made known its plans for building a flood-control and water conservation dam which will flood the present site.

With the assistance of the New Hampshire state planning and development commission, plans for a model town were drawn up and submitted to Hill's citizens. The plans were studied during several town meetings, and accepted when the residents voted to move their village to the new site.

State and federal agencies assisted in planning the new Shawneetown, about three miles from the old location at the confluence of the Wabash and Ohio rivers along the southeastern border of Illinois. The new town is oval in design, and no part is more than three blocks from the center. The main street is 100 feet wide, and a 30-foot parkway separates the street from the sidewalks. At one end of this street is the Gallatin County courthouse; at the other end, a community building.

Parking areas for the town are behind, instead of in front of, the stores. Houses that were not destroyed by the flood were moved to the new site, and the rest salvaged. Public buildings, for the most part, were built anew. Landowners received deeds to plots at the new town site, which was purchased by the state with $150,000 supplied by the state legislature. The old site will become a state park.

Leavenworth's 450 residents moved to a bluff high above the old site, which had been flooded eleven times since the town was founded. State and federal agencies cooperated in drawing up the town plan and relocating state highways. Work projects Administration officials estimated the cost of streets, sidewalks, water and sewer systems, a town hall, and other construction at a total of $125,000.

Many agencies are cooperating in moving Greenville from its present site to a new one about a mile up the highway. The Missouri state planning board is drawing up the new town plan, with technical assistance provided by consultants supplied by the National Resources Planning Board. Topographic maps of the new site were made by the United States army engineers. The town must be moved by 1941, when the new dam, to hold back waters of the St. Francis River from the Missouri River, is scheduled for completion.

Appendix B

History of the Rock Island Centennial Bridge

http://www.quadcities.com/RockIsland/bridhist.htm (Ref. 25)

Traffic problems between Davenport, Iowa and Rock Island, Illinois date as far back as the 1930s. In 1935, the mayors of both cities appointed a Bridge and Tunnel Commission to seek a solution to the cities greatest traffic problem-the elimination of the "Bottleneck" between the two cities. It was first thought a tunnel would be the quickest and cheapest solution. It could be built without federal action because river navigation would not be affected and cheaper because of acquiring rights-of-way, but more costly to maintain.

The Commission began studies of the Arsenal and Memorial Bridges (I-74). In 1912, the Government Bridge carried 550,000 vehicles annually. By 1935, traffic on that bridge had increased to 7,730,000. During 1936, the first year of operation for the Bettendorf-Moline Memorial Bridge it carried only 600,000 vehicles and the Arsenal Bridge increased to 8,085,000 vehicles. By 1939 the Arsenal Bridge carried nearly 9,000,000 vehicles. That was more traffic than either the George Washington Bridge in New York or the San Francisco Bay Bridge. Obviously, the new Memorial Bridge had not lessened the traffic flow problem between Davenport and Rock Island.

Before Davenport could participate in a tunnel construction, an enabling act would have to have been ratified through a voter referendum. Illinois law permitted Rock Island to erect a bridge through a bridge commission. It appeared the fastest route was for the City of Rock Island to appoint a commission and proceed with action to sponsor the construction of a bridge. Rock Island Mayor Galbraith set out immediately to gain the necessary federal action. There were no federal funds available to help pay for the bridge and since Rock Island had no money to construct and maintain a bridge, the toll concept was the only way to go. Rather than taxing the city's residents, a user fee would be in place. Tolls would pay for the construction and ongoing maintenance. Rock Island taxpayers should never be burdened. Revenue bonds were sold by the City of Rock Island to pay for construction.

After many meetings, trips to Washington, DC, and several setbacks, President Roosevelt signed a bill authorizing construction of Rock Islandls bridge on March 19,1938. One month later, the Davenport City Council authorized the City of Rock Island to build the Iowa approach. On May 19,1938 the Secretary of War approved Rock Island's permit for the bridge.

On December 29,1938, the Rock Island City Council awarded the contract for the initial work on the bridge. Actual construction began March 6,1939. All the piers were in place by November of 1939, two months ahead of schedule. Actual erection of the steel started in late July, 1939. Three hundred men worked on the project without a single fatality and a minimum number of injuries.

In recognition of the efforts of Rock Island Mayor Robert P. Galbraith, the City Council voted to name the bridge the Galbraith Bridge. Approximately two months before the bridge was to open, Mayor Galbraith declared his recommendation that the bridge be named the Rock Island Centennial Bridge in honor of the City's 100th year.

The Centennial Bridge is a strikingly beautiful series of five arches, the only one of its kind on the Mississippi River. The bridge is very strong because of its design. It is not only an arch design, but it is a "tied arch" construction. The arches are held together at the bottom like the string on a bow making each arch (span) independent of all others. Each arch goes from abutment to abutment. An abutment is where the arch reaches the ground and meets the resistance that keeps it stable. The bridge sits on piers which act as legs to support the structure. The piers are made of concrete and steel and go below the river and rest on rock beds. The Centennial Bridge was the first four lane bridge across the Mississippi River.

The bridge opened to traffic on July 12, 1940 and cost $2,500,000 to build. Tolls originally ranged from five cents for pedestrians to twenty-five cents for trucks. Autos, which accounted for the majority of traffic, paid a dime.

The Rock Island Centennial Bridge is owned by the City of Rock Island but is a separate entity because it is financed entirely by toll revenue, not taxes. The bridge is managed by a five member Commission. Four members are appointed by the Rock Island Mayor and approved by the Rock Island City Council. The Mayor serves as the fifth member. The Commission hires a manager to oversee the day- to -day operation.

Decorative lighting on top of the five arches was installed in 1988 through the efforts of an organization called Lights! River! Action!. The organization raised funds to not only install the lights but they continue to pay all the maintenance costs including electricity. No toll dollars have ever been used to support the arch lights. The beautiful lighted bridge has become a symbol of the Quad Cities.

Appendix C

Rock Island Centennial Bridge Goals

http://www.quadcities.com/RockIsland/bridgoal.htm (Ref. 26)

Centennial Bridge Engineers determined a few years ago that the bridge was in need of a new deck. A toll increase was initiated in 1991 for the purpose of funding the re-decking. Bridge deck replacement began the end of July,1995 and was completed November,1996. The project was financed through $2,200,000 in state and federal grants, $4,500,000 from a City of Rock Island General Obligation Bond Sale and the remainder from cash reserves. Toll revenue was expected to decline by 50 percent during construction but the bridge remained open throughout the project. The total rehabilitation cost $12,500,000.

The construction consisted of removal and replacement of the deck, sidewalk and median. The steel was repaired or replaced as needed. A new drainage system was installed to route the salt water (from snow removal) away from the concrete and steel. Several bearings, pins and links were replaced. The entire sidewalk handrail is being cleaned and painted. The total project took 1,383,530 pounds of re-bar, 5,031 cubic yards of concrete and 544,870 pounds of steel. The Centennial Bridge is comparable to a new bridge. Bridge Engineers estimate these repairs will extend the life of the bridge another 50 years. Estimates to build a new bridge are 70 million dollars.

The City of Rock Island tried, without success, to give the bridge to the Iowa and Illinois Departments of Transportation. It was felt that once the renovation was complete and bonds paid off the states could take the bridge, lift the tolls and maintain it as they do the Interstate-74 Bridge. Since the states refuse to accept the bridge the City/Commission will continue the toll operation until the authority to collect tolls expires, which is currently 2007, or until major repairs are required to keep the bridge safe. The City will not put the burden of Centennial Bridge on its taxpayers. Therefore, it is unlikely tolls will be lifted.

Rock Island Arsenal officials express concern about the maintenance of the century old Arsenal Bridge. In light of the current climate of the federal government, Arsenal officials are afraid to include bridge maintenance costs in their annual budget. Seventy percent of traffic on the Arsenal Bridge is non Arsenal related. Rather than jeopardize Arsenal closing or cutbacks they are suggesting the local communities assume responsibility for the bridge maintenance which is estimated at around $800,000 a year. The Arsenal Bridge is in need of extensive and costly repairs. Painting alone could cost up to ten million dollars. There is a study currently looking into placing a toll on that bridge. If nothing is done, this area stands to lose all crossing capability between Davenport and Rock Island by the year 2020.

Traffic counts for the Centennial Bridge for the three years prior to *[re]*construction were over five million annually. The Arsenal counts were over four million and I-74 over twenty million. The capacity for I-74 is seventeen and a half million.

Bi-State Regional Commission in co-operation with the Iowa and Illinois Departments of Transportation are conducting a study of Quad City River Crossings. This study is necessary to establish location and design features for additional crossing capacity. It should come as no surprise to anyone that major actions will be necessary and the entire metropolitan area is responsible for these actions. A new bridge today may not qualify for normally apportioned federal highway funds. It is certain any new bridge will require a substantial amount of local participation. The process from inception to completion is likely to take more than fifteen years.

The Quad City problem is not an inter-state problem. The over capacity of I-74 is due to local traffic. Therefore it is unlikely the federal or state highway administrations will be willing to give much assistance. Even if funding for additional lanes on the I-74 Bridge does come thru it will do very little to alleviate the problem between Rock Island and Davenport. History has proven the answers to Rock Island and Davenport "Bottleneck" problems won't be solved by upgrading the capacity between Moline and Bettendorf.