Clarence Darrow Bridge Preservation Coalition

July 30, 2024

Moira Kent Acting Chief Bridge Engineer CDOT 2 N. LaSalle St., Suite #820 Chicago, IL 60602

Dear Ms. Kent:

We are writing in response to the letters sent to potential Section 106 Consulting Parties by the Chicago Department of Transportation (CDOT) regarding the Columbia Drive Bridge Replacement Project.

Built in 1880, the bridge which was officially renamed the Clarence Darrow Bridge, is one of the most historic and beloved features of Jackson Park. Produced by renowned architects Burnham & Root, it is the oldest extant structure in the Frederick Law Olmsted-designed park. This bridge was used by visitors of the 1893 World's Columbian Exposition and was retained and re-used ever since. The bridge is listed in the National Register of Historic Places and as a Chicago Landmark.

The Clarence Darrow Bridge is fundamentally a pedestrian bridge in an active, public park. Its use by and for the public—walkers, bicyclists, fishermen, tourists—is an essential part of its character. Its continuity of use by visitors to the park links current and future pedestrians to important events described in the attached report, including the initial Burnham & Root architecture, the 1893 World's Fair tourist experience, the 1895 Olmsted plan, and its connection with famed attorney Clarence Darrow, and more.

Long neglected by CDOT and Chicago Park District, the historic bridge has suffered major deterioration, and has been fenced and cut-off from public use for over a decade.

Earlier this year, the Clarence Darrow Bridge Preservation Coalition formed to ensure that the historic structure is treated in a manner that meets best practices as set forth by the US Department of the Interior as it returns to public use.

The Coalition commissioned the attached report to provide an independent condition assessment of the bridge. Funded in part by a grant through the Timuel D. Black, Jr. Grant Fund for Chicago's South Side from Landmarks Illinois, the report was undertaken by Wiss, Janney, Elster Associates, Inc. (WJE) one of the nation's leading firms of architects, engineers, and materials scientists who specialize in the investigation, analysis, testing, and design of repairs for historic and contemporary buildings and structures.

Coalition Concerns

The Clarence Darrow Bridge Preservation Coalition is pleased to learn that CDOT plans to conduct a project that will "provide a safe and functional transportation link over the Jackson Park lagoon while reconstructing the Columbia Drive Bridge to its 1895 appearance." In furtherance of that goal, The

Coalition respectfully requests that CDOT, FHWA, and the Section 106 process address the following concerns and questions.

- The Secretary of Interior's Standards define "reconstruction" as "The act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure." As the bridge is a surviving structure, the Standards and Guidelines for Rehabilitation would appear to apply. Those guidelines are defined as: "the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values." Kindly confirm that CDOT will employ these standards.
- WJE conducted a limited condition assessment of the bridge that did not include an examination
 of below-water or below-grade components, inspection openings, sample removals, and
 structural or materials analysis. Such a study would determine whether the bridge's
 superstructure and substructure could be repaired rather than replaced. The Coalition would
 like to review CDOT's engineering studies that determined that the current condition of the
 bridge's superstructure and substructure are beyond repair.
- CDOT has indicated that this project will "salvage and reuse as much historic material as possible, including limestone blocks, railings and uprights, as possible as well as replacing character-defining materials, finishes, and features in-kind in order to reconstruct the bridge to its 1895 appearance." The Coalition commends this approach and would like to clarify that the appearance and character defining features should include those that can be viewed from the lower-level pedestrian path.
- The project will require a process for evaluating the condition of existing historic materials and fabric and determining which elements can be re-used and which cannot. Highly trained craftsmen may be required to ensure that historic fabric is treated correctly. Kindly explain the process and potential experts that CDOT will employ.
- CDOT indicates that a separate Archaeological APE was delineated, and ISAS conducted a survey in 2017 which indicated that there would be no impact to archaeological resources at the site. One of our Coalition members, Rebecca Graf, Ph.D., is the archaeologist who originally found and recorded sites 11CK1105 and 11CK1106 which are in the APE and included the remains of structures from the 1893 World's Fair. Dr. Graf conducted extensive excavation while at the University of Chicago. Her work on this site received highest honors by an international jury of her peers. She has published extensively on the topic including her 2020 book, *Disposing of Modernity*. Dr. Graf believes significant archaeological resources worthy of study may be located within the bridge's construction site. In keeping with best practices for National Register properties, CDOT should undertake archaeological mitigation of the site before construction.
- Previous reports indicate that CDOT will require the bridge improvements to meet HS10 Live Loads. We understand that this requirement is applied to bridges that are subject to heavy rolling and static vehicular loads. Since the bridge will be primarily used to support bicycles and

pedestrians within the park, kindly advise why this load requirement is specified especially when adjacent locations can support emergency vehicles.

• As the bridge is a designated Chicago Landmark and it has been over 5 years since CDOT presented its previous plans for review by the Chicago Commission on Landmarks. When will CDOT bring revised plans for review by the commission?

We welcome your attention to these issues and look forward to a written response to our concerns.

SIGNED,

Jaćk Spicer

Brit 7 Nulnes Brenda Nelms

Jackson Park Watch Landmarks Illinois Preservation Chicago Olmsted Network Midway Plaisance Advisory Council Friends of the Parks Hyde Park Historical Society Friends of the White City Clarence Darrow Commemorative Committee Tim Samuelson, Chicago Cultural Historian Emeritus Julia Bachrach Mary Lu Seidel Roger Deschner Rebecca S. Graff

Clarence Darrow Bridge History and Limited Condition Assessment









Clarence Darrow Bridge Preservation Coalition

A group of organizations and individuals concerned about the iconic Jackson Park bridge and the need for its repair and preservation formed this coalition and commissioned this report.

Conducted by Wiss, Janney, Elstner Associates, Inc., this report was made possible by the Landmarks Illinois Timuel D. Black, Jr. Grant Fund for Chicago's South Side

July 29, 2024



April 25, 2024

Ms. Brenda Nelms Co-President and Treasurer Jackson Park Watch P.O. Box 15302 Chicago, Illinois 60615

Clarence Darrow Bridge, Jackson Park, Chicago

Limited Condition Assessment WJE No. 2023.7951

Dear Ms. Nelms:

At the request of Jackson Park Watch, Wiss, Janney, Elstner Associates, Inc. (WJE) has conducted an evaluation of the historic Clarence Darrow Bridge at North Pond in Jackson Park. The bridge, constructed in 1880, is one of the earliest public projects designed by the renowned architectural firm of Burnham and Root. It was an important feature of the World's Columbian Exposition of 1893 and was retained and altered as part of Frederick Law Olmsted's 1895 redesign of Jackson Park. In 1957, the bridge was officially renamed the Clarence Darrow Memorial Bridge after the renowned Chicago attorney.

We appreciated receipt of the archival photographs, newspaper articles, and other information that your office provided for our review. We understand that Preservation Chicago requires an assessment of the bridge to understand if the bridge can be retained and repaired. We understand that future use will be primarily for pedestrians and bicycles, as well as use by emergency vehicles.

Based on our recent discussion, WJE performed a review of available documentation and conducted a site visit to observe the condition of the bridge. The bridge was viewed from available points of access adjacent to and below the structure; the bridge deck has been closed to access since 2009 by the Chicago Park District. (After the site visit for this study was conducted, access to the walkway along the west abutment was also closed.) The visual assessment included the superstructure and masonry abutments where they were visible above ground and water. Notable conditions observed were documented with field notes and photographs. WJE also took measurements at selected locations on the structure. A general structural evaluation was conducted; however, structural analysis is not a part of this scope of services.

Assessment of below-water or below-grade components of the bridge, as well as inspection openings, sample removals, and structural or materials analysis, were also not a part of the scope of services; however, follow-up assessment of these elements is discussed below.

Historical Overview

A South Side icon, the historic Clarence Darrow Bridge (known previously as the East Bridge and later as the Columbia Basin Bridge) is among the most significant features of historic Jackson Park. Built in 1880,



the bridge is one of the oldest structures in the park. It is also among the earliest public projects produced by the acclaimed architectural firm of Burham and Root. It was retained as part of the World's Columbian Exposition of 1893 and altered as part of Frederick Law Olmsted's 1895 redesign of Jackson Park. Later modifications included repairs to the structure and bridge deck, possibly in the 1930s. In 1957, the bridge was formally renamed in honor of renowned Chicago attorney Clarence Darrow, who loved the historic bridge so much that he had his ashes scattered from this location.¹

Early History of Jackson Park and Bridge Construction

Chicago's South Park Commission was established by the Illinois state legislature in 1869 with the goal of creating a magnificent South Side park and boulevards that would link the greenspace to the fledgling West Park System and Lincoln Park. The South Park Commission soon began acquiring an expansive site with Lake Michigan frontage and hired Frederick Law Olmsted (1822–1903) and his then-partner Calvert Vaux (1824–1895) to prepare an original plan for the park. The designers of New York City's Central Park, Olmsted and Vaux, "had become the nation's most influential landscape architecture firm, promoting urban parks as places of refuge from the stresses of the city and also as democratic spaces" for people of all classes.²

Frederick Law Olmsted and Calvert Vaux originally conceived of Jackson Park as the Eastern Division of a 1,055-acre greenspace known as South Park. (The site would also include the Western Division, or Washington Park, and the Midway Plaisance, which linked the two divisions.) The landscape designers' original 1871 plan featured an interconnected series of waterways that would link with Lake Michigan. "Olmsted and Vaux envisioned Lagoon scenery as the distinctive attribute of Jackson Park's landscape."³ The plan shows a bridge that would cross between the northernmost basin (North Pond, later renamed Columbia Basin) and the greater lagoon system.

The South Park Commission encountered various obstacles, and the development of the Eastern Division (Jackson Park) was delayed for several years. When the park commissioners were ready to begin construction of this portion of the park in the mid-1870s, they excavated an oblong-shaped water feature called Twin Lakes on the northwest perimeter of the park. A masonry and iron bridge was built across the Twin Lakes. (The water feature and bridge no longer exist.)

In 1879, the commissioners began making improvements to the north part of the park, east of the Twin Lakes. The project included the creation of second, somewhat larger artificial lake that would become known as the North Pond and later as the Columbia Basin. (It originally had two small islands with rocky

¹ WJE appreciates the assistance of Julia S. Bachrach in preparation of this report. Ms. Bachrach, who served as historian and preservationist for the Chicago Park District for more than twenty-five years, shared her research materials and developed the historical overview for the report. She is currently principal of Julia Bachrach Consulting, LLC, in Chicago. Cray M. Kennedy of WJE also contributed to archival research for this historical overview.

² Julia S. Bachrach, *The City in a Garden: A History of Chicago's Parks: Second Edition* (Chicago: Center for American Places at Columbia College Chicago, 2012), 11.

³ David Schyler and Gregory Kaliss, eds. *The Papers of Frederick Law Olmsted, Volume VI: The Last Great Projects 1890–1895* (Baltimore: Johns Hopkins University Press, 2015), 19.



edges.) In April of 1880, Daniel H. Burnham and John Welborn Root received the commission to design what was then called the East Bridge. The masonry and iron bridge would cross over a new carriage drive at the south end of North Pond.⁴ This project represented the beginnings of a long and fruitful relationship between Daniel Burnham and the South Park Commission.

Plans showing progress in improvements to the eastern and western divisions of South Park were published in 1880 (Figure 1). In its Annual Report for the year 1879–1880, the South Park Commission asserted:

The most important work in the East Park, aside from the completion of the new portion, the improvement of which commenced last year, was the construction of a stone and iron bridge, across an arm of the artificial lake. The quicksands at the base of this work rendered necessary a large expenditure to secure a permanent foundation, which is made of piling and concrete, upon which rise heavy courses of masonry.⁵

The South Park Commission Annual Report for 1880–1881 lists the contractors and material suppliers who contributed to construction in Jackson Park. Among those listed is L. B. Boomer, for "iron work for bridge."⁶ Boomer was co-founder in 1870 of the American Bridge Company and served as its first president.⁷ Other suppliers listed include P. G. Dodge & Co., which supplied lumber for the bridge; Jacob Furst & Son, which supplied cut stone for the bridge; and Howard & Fox, which receive the masonry contract for the bridge. The report lists Burnham & Root as providing plans for the bridge.⁸

In 1881, the South Park Commission graded and completed the drive that crossed over the bridge, and the new carriage route was opened in time for "driving season."⁹

Daniel Hudson Burnham

Considered one of the most visionary architects and planners in Chicago history, Daniel Hudson Burnham (1846–1912) began his training in the office of William Le Baron Jenney, who is often considered "the father of the skyscraper."¹⁰ In 1873, while working in the office of Carter, Drake & Wight, Burnham and a

⁴ South Park Commission, "Minutes of the South Park Commissioners," June 1, 1880, volume 2, 243.

⁵ South Park Commissioners, "Report of the South Park Commissioners to the Board of the County Commissioners of Cook County, from December 1, 1879, to December 1, 1880," 8. It is not known whether the descriptions of the supporting soils and bridge foundation are accurate.

⁶ South Park Commissioners, "Report of the South Park Commissioners to the Board of the County Commissioners of Cook County, from December 1, 1880, to December 1, 1881," 35.

⁷ J. Seymour Currey, "American Bridge Company," *Manufacturing and Wholesale Industries* (Chicago: Thomas B. Poole Company, 1918), 16.

⁸ South Park Commissioners, "Report of the South Park Commissioners to the Board of the County Commissioners of Cook County, from December 1, 1880, to December 1, 1881," 35.

⁹ South Park Commissioners, "Report of the South Park Commissioners to the Board of the County Commissioners of Cook County, from December 1, 1879, to December 1, 1880," 8.

¹⁰ "Architects: Daniel Burnham," City of Chicago: Chicago Landmarks, <u>https://webapps1.chicago.gov/landmarksweb/web/architectdetails.htm?arcId=7, accessed March 2024.</u>



talented associate, John Wellborn Root (1850–1891), decided to form their own partnership. Two years later, the young firm of Burnham and Root was commissioned to design a Prairie Avenue mansion for John Sherman, founder of Chicago's Union Stock Yards. Through this project, Burnham met, fell in love with, and married Sherman's daughter Margaret. The firm greatly benefitted from both the success of the design project and the prominence of the Sherman family.¹¹

Sherman became a member of the South Park Board of Commissioners in 1878. Shortly thereafter, Burnham & Root became the preferred architectural firm for the South Park Commission. In addition to designing the East Bridge, Burnham & Root designed a small bathroom building in Jackson Park, and two buildings in Washington Park, a Stables/Roundhouse, and a Refectory. Burnham & Root also produced noteworthy Chicago structures such as the Monadnock, Reliance, and Rookery Buildings, as well as the Union Stock Yards Gate.

World's Columbian Exposition

Soon after Chicago won the honor of hosting the World's Columbian Exposition in 1890, Burnham and Root were named the consulting architects and Olmsted the consulting landscape architect for the Fair. Olmsted recommended Jackson Park as the site for the fairgrounds. Remaining true to his original plan for the park, Olmsted believed that Lake Michigan would provide a dramatic backdrop and that the fairgrounds should feature an interconnected lagoon system. Burnham soon began working with Olmsted and his associate Henry Codman to develop a general scheme for the fairgrounds.

Although nearly the entire park was redesigned as the Exposition fairgrounds, the design team decided to retain the existing East Bridge. Sketches of the World's Columbian Exposition site, including "the South Bridge," were published in the *Chicago Tribune* on September 28, 1890 (Figure 2).¹²

Planning continued through 1891 and 1892 (Figure 3 and Figure 4), and the World's Fair opened for a sixmonth period in May 1893 (Figure 5). Visitors utilized the bridge and from it, they enjoyed a fine view of the Palace of Fine Arts (now the Museum of Science and Industry), a beautiful Beaux Art style structure overlooking the water just to the north, which had been designed by Charles Atwood. Visitors could travel in boats along the waterway to see the buildings and sites of the fair; the bridge was a key element in views to, across, and from the lagoon (Figure 6 through Figure 13). John Welborn Root and Henry Sargent Codman (1863–1893) both died before the fairground had been completed; Codman died suddenly while recuperating from an appendectomy and while working on the landscape for the exposition. But Frederick Law Olmsted and Daniel Burnham carried on and the World's Columbian Exposition helped spark the City Beautiful Movement throughout the United States.

The Exposition had been planned as a temporary attraction and most of the buildings were constructed of a plaster-like material called staff, made to resemble stone. By the late summer of 1893, Burnham and

¹¹ Julia S. Bachrach, "Daniel H. Burnham and Chicago's Parks," Chicago Park District, 2009, <u>https://www.chicagoparkdistrict.com/sites/default/files/images/page/burnham.pdf, accessed March 2024.</u>

¹² The bridge is apparently titled "The South Bridge" in this illustration because of its location at the south end of the North Pond, later renamed Columbia Basin.



other prominent Chicagoans wanted to memorialize the Exposition by creating a permanent museum on the former fairgrounds. The group formed a committee to raise money and acquire anthropological artifacts that had been displayed at the fair. The Palace of Fine Arts had been constructed with fireproof masonry vaults (to provide protection for the valuable art collections displayed there.) As it was perceived as a more permanent building than the others constructed for the fair, the Palace of Fine Arts was selected as the building that would be retained as the museum. That fall, the World's Columbian Exposition directors agreed to sell the Palace of Fine Arts to the newly appointed museum trustees for \$1. As Marshall Field, Chicago's well-known department store magnate, offered to donate \$1 million to the establishment of a permanent museum, the structure was named the Field Columbian Museum.

In 1894, Olmsted's firm (then known as Olmsted, Olmsted, and Elliot) began working on plans to transform the fairgrounds back into useable parkland. As the only major fair building to remain in improved Jackson Park, the Field Columbian Museum and its surrounding landscape were considered very important aspects of the plan. Once again, the design team consciously retained the bridge, which would serve as an important transition in the landscape. The view of the museum would be unobstructed from the north, while the area between the drive and the southern boundary of the park would be "... heavily planted with trees to block the view of the city beyond."¹³ In fact, the bridge stood "... exactly on the main axis of the museum, reflecting the symmetry of Atwood's design."¹⁴

Olmsted, Olmsted and Eliot completed their Revised General Plan for Jackson Park in 1895 (Figure 14). The detailed plan included a written description under the heading "Design." It notes that "Contrasting with the rest of the park, the neighborhood of the vast building of the Field Columbian Museum is designed upon formal lines for the sake of architectural harmony."¹⁵ On the plan, the water feature was labelled the Columbia Basin, and the bridge as Columbia Bridge. Although the reshaping and the formal hard-edge treatment were never undertaken as shown on the plan, the carriage drive was realigned to create a more formal circuit around the north end of Jackson Park. The bridge itself was widened and altered to provide a new flat concrete deck and simpler iron railings (Figure 15) The railings were reused from another World's Columbian Exposition bridge that was demolished after the fair. (Refer to Figure 12 for an example of the characteristic railing used on bridges constructed for the fair.)¹⁶

The bridge continued to be a favorite vantage point and to feature in views of the park throughout the following decades. The park, its buildings, and the bridge were also the subject of various commercially produced postcards as well as aerial photographs (Figure 16). In 1933, the Museum of Science and Industry, shown in the aerial view in Figure 17, was funded and housed in the former Palace of Fine Arts.

¹³ David Schyler and Gregory Kaliss, eds., *The Papers of Frederick Law Olmsted*, *Volume VI: The Last Great Projects 1890–1895* (Baltimore: Johns Hopkins University Press, 2015) 44.

¹⁴ Patricia L. Morse, "Hyde Park Stories: Darrow Bridge," *Hyde Park Herald*, March 6, 2024.

¹⁵ Olmsted, Olmsted, and Eliot, Landscape Architects, "Revised General Plan for Jackson Park," 1895.

¹⁶ Correspondence with Tim Samuelson, April 2024. Note that the railing was custom designed for the fair and that similar railings were present at various locations in the fairgrounds.



The South Park Commission and twenty-one other separate park commissions were consolidated into the Chicago Park District in 1934. The park district soon received federal funds through the Works Progress Administration, the New Deal-era program established by President Franklin D. Roosevelt to help provide work for the unemployed during the Great Depression. Chicago Park District drawings from the 1930s document proposed changes to the bridge and its retaining walls (Figure 19 and Figure 18). Works Progress Administration photographs document work in Jackson Park including repairs to the bridge photographs (Figure 20 through Figure 25).

Clarence Darrow and the East/Columbia Bridge

Clarence Darrow (1857–1938), one of the most famous trial lawyers in American History and staunch defender of the freedom of speech, lived near Jackson Park. He loved the park and especially the historic bridge (Figure 26). Darrow and his second wife, Ruby Hammerstrom, could see the East/Columbia Bridge from the front window of their apartment at 1537 East 60th Street; "Legend has it that he didn't just go to the bridge to meditate, he also practiced his famous oratory on the fish in the lagoon."¹⁷

After Clarence Darrow died on March 13, 1938, he was cremated. His wife Ruby considered scattering his ashes back in his hometown of Kinsman, Ohio, but decided instead "... to leave him where he had been happiest"—in Jackson Park, at the East/Columbia Bridge.¹⁸ She had his friend George Whitehead, and her stepson, Paul Darrow, strew Clarence Darrow's ashes from the East Columbia Bridge, into the water below.

Toward the end of his life, Clarence Darrow had become interested in the Spiritualist movement, which had become popular during the 1920s and 1930s. He was worried that spiritualists and clairvoyants were using magicians' tricks during seances. Darrow had met and made a pact with businessman and amateur magician Claude Noble. According to this pact, "... if there was an afterlife, whoever died first would come back and knock something out of the survivor's hand" as a sign of communication from beyond.¹⁹

On March 13, 1940 (the second anniversary of Clarence Darrow's death), Noble staged a ceremony at the bridge to look for Darrow's ghost, hoping to have an item of significance to Darrow struck from his hand. Noble and other friends of Darrow repeated the ceremony the following year. This event became an important cultural occurrence in Chicago, and it has occurred annually since that time, with only a few exceptions. In 1957, Ruby Darrow died and at her request, her ashes were also scattered from the bridge. That year marked what would have been Darrow's one-hundredth birthday. Noteworthy Chicagoans such as Senator Paul Douglas and Alderman Leon Despres participated in the ceremony, and the Chicago Park District officially named the bridge the Clarence Darrow Bridge. (Figure 27). Since sometime in the 1960s, the Clarence Darrow Commemorative Committee has organized the annual event on March 13. In

¹⁷ Patricia L. Morse, "Hyde Park Stories: Darrow Bridge," *Hyde Park Herald*, March 6, 2024.

¹⁸ Andrew E. Kersten, *Clarence Darrow: American Iconoclast* (New York: Hill and Wang, 2011) 241.

¹⁹ Patricia L. Morse, "Hyde Park Stories: Darrow Bridge," *Hyde Park Herald*, March 6, 2024.



conjunction with a wreath-laying ceremony at the bridge, the group sponsors lectures and other special events to educate the public about "Mr. Darrow's life, career, achievements, and values."²⁰

In 1962, the Chicago Park District turned the bridge over to the Chicago Department of Transportation. At that time, the City had plans for a major new highway through Jackson Park that required the demolition of the bridge. The Hyde Park community organized massive protests and the project never materialized. In the same year, drawings were prepared for construction of a dam and drainage improvements at the Columbia Basin.²¹ Documentation of whether this work was performed, possibly on a temporary basis, was not found as part of this review; however, the drawing for construction of a dam includes information for a soil boring taken at the bridge.²²

Significance

The Clarence Darrow Bridge possesses national significance under National Register of Historic Places Criteria A and C. The oldest extant structure in the park, the bridge is among the earliest remaining public projects produced by the renowned firm of Burnham and Root. It is one of the first elements associated with all three of Olmsted's designs for Jackson Park—the original plan of 1871, the plan for the World's Columbian Exposition of 1893, and the transformation of the greenspace back to parkland after the fair. Although not addressed in the National Register nomination, the bridge is also associated with Clarence Darrow, one of the most influential defense attorneys in American history. Darrow loved the bridge, spent considerable time in this area in Jackson Park, and had his ashes scattered from the bridge. Not only was the bridge officially named for him, but an annual ceremony has been held in Darrow's honor at this site for decades.

Jackson Park was listed in the National Register of Historic Places in 1972. As is typical for nominations of that period, the registration form is quite short, and does not identify contributing and non-contributing resources. The park is also identified as a nationally significant property in the Multiple Property Documentation Form for the National Register entitled "The Historic Resources of the Chicago Park District," which was approved by the National Park Service in 1990. Jackson Park is also included in the Chicago Park Boulevard Historic District, which was listed in 2018.

None of these nominations identified contributing and non-contributing resources or developed a specific Period of Significance (POS) for Jackson Park. However, in 2018, the *Section 106 Historic Properties Identification Report: Federal Undertakings in and Adjacent to Jackson Park, Cook County, Illinois,* provided a detailed analysis that identified the Clarence Darrow Bridge as a contributing resource and 1875–1953 as the period of significance for Jackson Park. The Historic Properties Report was approved by the Illinois

²⁰ "About Us," Clarence Darrow Commemorative Committee: <u>https://darrowbridge.wordpress.com/about/, accessed</u> <u>March 2024.</u>

²¹ "Dam at Columbia Basin Bridge Plan, Section, and Detail," April 6, 1962, Chicago Park District, Jackson Park, Chicago Park District Records: Special Collections, Chicago Public Library; "Drainage Plan for Columbia Basin," April 10, 1962, Chicago Park District, Jackson Park, Chicago Park District Records: Special Collections, Chicago Park District, Jackson Park, Chicago Park District Records: Special Collections, Chicago Park District, Jackson Park, Chicago Park District, Jackson Park, Chicago Park District, Special Collections, Chicago Park District, Jackson Park, Chicago Park District, Special Collections, Chicago Park, Chicago Park District, Jackson Park, Chicago Park District, Special Collections, Chicago Park, C

²² "Dam at Columbia Basin Bridge Plan, Section, and Detail," April 6, 1962, Chicago Park District, Jackson Park, Chicago Park District Records: Special Collections, Chicago Public Library.



State Historic Preservation Office, the U.S. Federal Highway Administration, and the U.S. National Park Service. An information package issued by the City of Chicago, Department of Transportation, gives the following dates of construction: stone abutment walls, 1880; deck element, as early as 1895; and hand railings, 1893.²³ As part of Jackson Park, the bridge falls within the overall period of significance of 1875–1953 identified for the park.

The bridge is also listed as a Chicago Landmark as part of the 1994 Museum of Science and Industry nomination. The Commission on Chicago Landmarks report on the Museum of Science and Industry emphasizes the importance of the landscape, of which the bridge is a key feature. The report states that the museum building and the surrounding landscape "... still retain a great deal of their original aspects, particularly when seen from the south: on the lagoon, from Jackson Park, or from the Wooded Island The contrast here between the ideas of Olmsted, who favored the natural landscape, and the formalism of Atwood's building design still are presented with the same clarity that they had during the World's Columbian Exposition."²⁴

In 2018, the Permit Review Committee of the Commission on Chicago Landmarks reviewed a proposal to repair/replace the bridge and provided the directive that the existing stone and cast iron must be carefully dismantled and re-used. Specifically, the review noted that:

... the existing historic features including stone and metal railings shall be carefully dismantled, catalogued, and saved for reuse. The existing bridge structure and deck will be demolished and replaced with new in the same location, size, overall design and appearance. The design of the new bridge will retain the existing walls' (stone abutments, wing walls, lower path stone wall) size, shape, height, radius, and detail. The salvaged stone will be repaired and reinstalled to the greatest extent possible and new stone to match existing will be installed where needed.... The historic railings including cast iron posts, and barrel-shaped posts at the four corners of the bridge, should be repaired and reinstalled on the new bridge and each side of the approach to the greatest extent possible....²⁵

Today, the massive limestone abutments, curved walkways, limestone retaining wall along the water at the west abutment, and portions of the railings from the original bridge construction remain, as well as the paths and steps leading to the bridge. The pony trusses that were a part of the original bridge are no longer present; however, the original projecting stone haunches that supported the trusses remain at the abutment walls. The existing superstructure replaced the original trusses superstructure in 1895 and retains the scale of the original bridge. The paths, walkways, and retaining wall; limestone abutments; and existing superstructure and railings incorporate a great deal of historic fabric and maintain the scale and

²³ City of Chicago, Department of Transportation, "Information Package for Columbia Bridge in Jackson Park – Historic Bridge for Sale: Columbia Bridge in Jackson Park, Chicago, Illinois," 2017.

²⁴ *Museum of Science and Industry, 57th Street at Lake Shore Drive*, submitted to the Commission on Chicago Landmarks, January 5, 1994.

²⁵ City of Chicago, Commission on Chicago Landmarks, Permit Review Committee, Meeting Minutes, Permit Review Committee Meeting, March 8, 2018.



character of the historic bridge. The Clarence Darrow Bridge thus retains integrity and continues to convey its historic character and significance.

Observations and Discussion

On March 20, Mike Ford, Gary Klein, and Deborah Slaton of WJE conducted a visual assessment of the Clarence Darrow Bridge. Harry Hunderman of WJE participated in the assessment and contributed to the photographic documentation.

The Clarence Darrow bridge spans a channel within the East Lagoon of Jackson Park in Chicago, Illinois. It consists of load-bearing stone abutments on either side of the channel, a riveted steel superstructure supporting a concrete deck, and cast iron railings, as well as a walking path with stone retaining walls between the west abutment and the water (Figure 28 through Figure 34).

An information package issued by the City of Chicago, Department of Transportation, notes that the bridge span is 56 feet 0 inches and the width is 56 feet 6 inches, including the 40-foot-wide roadway and adjacent sidewalks, each 8 feet 3 inches wide. The bridge type is identified as deck plate girder with four shallow girder lines.²⁶

The abutments are located on the east and west sides of the channel and consist of coursed rock-faced limestone units with a rubble masonry wall behind; the rubble masonry is exposed where the limestone units have become displaced at some locations. The massive stone units comprising the abutments range in size and are typically 16 to 18 inches tall, up to 48 inches long, and 17 inches deep (where visible at the corners of the abutments). Centered on each abutment are two large stone haunches, measuring approximately 48 inches tall, which appear to have supported the original truss system that in turn supported the bridge deck (Figure 35). The area above the haunches has been infilled with concrete. The abutment walls are semicircular in plan, curving away from the water and tapering in height as they curve away from the bridge span. Each abutment has a stone coping. At the end of the abutment walls are stone finials. The foundation for the abutments is not visible above grade.

The bridge superstructure consists of riveted steel girders that extend east-west along the length of the bridge, with north-south floor beams and stringers supporting the deck. As shown in archival photographs (refer to Figure 8 and Figure 12), the bridge as originally constructed with two pony trusses, in which the travel surface extends along the bottom chords of trusses at either side of the bridge that are not connected at the top. Pony truss bridges were typically designed for lighter loads, in contrast to through truss bridges, designed for heavier loads and longer spans, where the deck is carried by the bottom chord but the trusses are connected by cross-bracing at the top.²⁷ The pony truss elements of the original bridge are no longer extant.

²⁶ City of Chicago, Department of Transportation, "Information Package for Columbia Bridge in Jackson Park – Historic Bridge for Sale: Columbia Bridge in Jackson Park, Chicago, Illinois," 2017.

²⁷ North Carolina Department of Transportation, "Truss Bridges," <u>https://www.ncdot.gov/initiatives-policies/Transportation/bridges/historic-bridges/bridge-types/Pages/truss.aspx</u>, accessed April 2024.



The concrete deck arches between and encases steel stringers that are spaced at 24-inch centers and span east-west between floor beams (Figure 36 and Figure 37). Each concrete rib is about 14 inches deep and 6 inches wide at the base. Based on the circa 1930s Chicago Park District drawing, the stringers consist of Warren truss diagonal members between steel chords. The bottom chord was measured to be 2-1/2 inches wide (Figure 18). This arched configuration suggests that the concrete deck itself is unreinforced.

A cast iron perimeter railing extends along the length of the bridge deck and consists of a surfacemounted fluted round post with a finial at either end of the bridge (Figure 38). Fluted rectangular intermediate posts with a pointed arch cap are positioned along the length of the deck (Figure 39). Round upper and lower rails span between the posts.

The walking path is accessed from a limestone stair that extends from the concrete approach apron, down an embankment, and to the gravel-paved walk. The stair and portions of the wall edging the lagoon are constructed of limestone slabs with rough cut edges that overlap each other. The design of the limestone stair suggests that it was intended to follow the terrain. The stone units that edge the lagoon have a similar rough cut appearance (refer to Figure 32 and Figure 34). As the walk wraps around the base of the west abutment, it is edged with a stone base and retaining wall that reflect the curve of the abutment wall (Figure 40). The base measures approximately 12 inches tall and 16 inches deep and is supported on a stone masonry foundation. Each section of the carved stone retaining wall measures approximately 36 inches tall and 8 feet long and sits on the stone base.

- The ends of the abutment walls are buried under soil that appears to have eroded from the embankment above (Figure 41).
- Portions of the walk have been washed out and the stone base and limestone retaining wall units have fallen or are displaced (Figure 42).
- Some of the stone cladding units at the abutments are visibly cracked and/or sounded fractured when tapped with a mallet. In general, the distress appears to be at the surface of the stone and the underlying stone substrate is sound; however, there are a number of units with extensive horizontal cracking and unsound material extending further into the depth of the stone (Figure 43 and Figure 44).
- A reinforced concrete jacket exists at the east abutment, which appears to have been added to arrest and contain undermining of the east abutment wall at its base. The jacket was placed around the haunch above and was therefore constructed after the haunch. The concrete jacket has two large spalls that extend the full depth of the jacket (Figure 45). One of the spalls aligns with the stone haunch and the underlying rubble masonry backup is exposed to view. In addition to the spalls, vertical cracking is present that aligns with joints in the stone cladding (Figure 46).
- Portions of the stone cladding at the west abutment wall have collapsed, especially at the north end of the west abutment wall where a portion of the wall is unsupported, and the rubble stone backup masonry is exposed to view (Figure 47). The rubble foundation, if present, appears to have deteriorated at this location (Figure 48).



- The steel structure below the concrete deck slab is severely corroded. Nearly all of the framing members exhibit full section loss of the steel or are no longer anchored to the structure due to loss of section through corrosion (Figure 49).
- The concrete deck is in poor condition and exhibits widespread cracking and spalling of the concrete, specifically at the ribs, where the embedded steel is observed to be corroded (Figure 50) is also extensive cracking as well as large calcium carbonate deposits hanging from the underside of the deck, indicative of water ingress through the slab (Figure 51).
- Some of the intermediate rail posts and the horizontal rails of the railing have been replaced with modified steel I-beams (Figure 52).

Access to the bridge deck is precluded by a painted steel fence that surrounds the entire bridge at deck level, exterior to the railings along the north and south sides and across the width of the bridge to the east and west of the bridge deck (Figure 53). After the site visit for this study was completed in March 2024, new fence and gate assemblies were installed at the north and south ends of the west abutment to prevent access to the area along the walkway beneath the bridge, adjacent to the water (Figure 54 and Figure 55).

Conclusions and Recommendations

Based on the limited assessment conducted for this study, the different components of the bridge vary in their condition and potential for repair.

The stone steps and paving that provide access to the area below the bridge are generally intact, with localized displacements. The steps and paving require repair to provide a safe walking surface; however, further study would be needed if universal access is desired to areas below the bridge. Universal access to the bridge appears feasible and desirable. Note that further study of accessibility will be required as part of design development for rehabilitation of the bridge.

The massive stone units of the abutments exhibit localized displacement of units, with the most severe distress observed at the north end of the west abutment. Distress conditions include cracking of individual limestone units at various locations. Most of the individual stone units are salvageable with repair; however, further study is required to determine whether the abutments can be stabilized in place or need to be dismantled and reconstructed. This determination largely depends on the nature and condition of the foundations, to evaluate how the foundations were constructed (e.g., whether pilings or other support elements are present), and whether deterioration at the base of the wall has undermined the above-grade masonry. Selective, localized excavations at the base of the abutment walls are necessary to understand the existing foundations and whether remediation at the foundations is required. At the west abutment, hand-dug excavations could be performed to examine the existing foundations at representative locations. The east abutment will be more challenging, although it is possible that hand excavation, working from the water (in a wetsuit) rather than boat access could be sufficient. This excavation would focus particularly on the void in the east abutment that is visible from the west side. Possible approaches to stabilization, repair, or rebuilding of the abutments include underpinning the masonry and providing additional foundation support with the above-grade masonry in place, or dismantling and reconstructed the abutments on new foundations. As part of the investigation, the existing construction of the above-



grade walls should be confirmed, as well as the condition of the masonry rubble observed behind the facing units. If the abutments can be retained and repaired in place, displaced units should be removed and reset. A close-up visual assessment should be performed, including sounding of individual units, to determine if measures such as installation of dutchman or crack repairs is required.

The steel superstructure of the bridge exhibits severe corrosion and loss of section. The steel framing and concrete deck are in poor condition. The riveted steel girders and floor beams exhibit advanced corrosion, with rust holes and severe section loss. The concrete deck shows evidence of advanced freeze-thought deterioration and water leakage. The existing superstructure is not the pony truss that existed when the bridge was first designed and constructed; however, the existing superstructure was installed within the period of significance for the historic structure. If the existing steel assembly were to be retained, extensive repair and localized replacement would be required. Modifications to the existing steel structure would be needed to accommodate the loading that we understand will be required (i.e., pedestrian and emergency vehicle traffic). Given the condition of the existing steel structure and required modifications for continued use, repair may not be determined feasible. If the steel superstructure is replaced, the design development to determine the extent to which a new concrete superstructure would convey this character. If the superstructure is replaced, the existing structure should first be documented to record existing construction, and the Chicago Park District may want to retain selected components of the steel structure for archival purposes.

The railings include components that appear to be part of the historic fabric as well as replacement pieces. The original rail elements are iron and do not exhibit extensive cracking. While a few original elements have been replaced, many remain and can be salvaged and restored for reuse. This process would involve dismantlement, cleaning to remove existing coatings, removal of corrosion, localized repairs as needed, and preparation and coating with a rust-inhibitive coating system. New elements matching the original pieces will need to be fabricated to replace existing non-original elements.

In summary, the apparent condition of the foundations makes it unlikely that the abutments can be stabilized in place. Should further investigation confirm that the foundation is not adequate as constructed and in its existing condition to support the bridge safely for continued use, and given the need to replace the deteriorated superstructure, it would be appropriate that the stone be dismantled and reinstalled in its original configuration, with a reinforced concrete back-up wall. New masonry units, matching the original units in material, configuration, and finish, would be provided as needed. This would preserve the original fabric and character of the elegantly curved bridge abutments, the most important historic feature of the bridge. As noted, further investigation as described would be needed to make a final determination.

The existing limestone retaining units that edge the water along the west abutment should be retained. The missing units should be replaced with matching units; it is possible that the missing units have fallen into the water and can be retrieved for reuse.

The 2020 Illinois Department of Transportation Enhancement Project (ITEP) document proposes that the bridge "be removed and replaced with a structure that matches the existing structure as closely as



possible....^{"28} As discussed above, pending further investigation, it should be possible to retain extensive historic fabric for reuse in the repaired or reconstructed bridge.

The ITEP document provided for review does not include a condition assessment report. If a condition assessment was conducted by the Chicago Department of Transportation or others prior to issuance of the 2017 document and a report from that assessment is available, we are available to review the report to inform further our findings and conclusions above.

Sincerely,

WISS, JANNEY, ELSTNER ASSOCIATES, INC.

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yan Meli-

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²⁸ General Project Information dated October 2020, project sponsor: Chicago DOT, ITEP number 14309.



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FIGURES



Figure 1. Maps "Showing Progress in the Improvement of the Western Division of South Park, Chicago, Ill's, 1880," and "Showing Progress in the Improvement of the Eastern Division of South Park, Chicago, Ill's, 1880." The "improvements" are shown in color. The location of the bridge is indicated by the red arrow (added by the authors). (Source: Chicago Public Library, Special Collections. Chicago Park District Records: photographs, Drawing 3964)





Figure 2. Sketches of the World's Columbia Exposition site and proposed plans, including "the South Bridge" at the right. The stone abutments and pony trusses of the bridge are shown in this sketch. (Source: "Snap View of the Site: Pencil and Camera Tell Where the Fair Will Be Held," Chicago Daily Tribune, September 28, 1890)





Figure 3. "Map of Improved Portion of Jackson Park, Surveyed by the Bureau of Construction of the World's Columbia Exposition," February 1891. (Source: U.S. Department of the Interior, National Park Service, Frederick Law Olmsted National Historic Site, accessed April 11, 2024, https://www.flickr.com/photos/olmsted archives/33089721470/in/album-72157650326363036/)





Figure 4. "World's Columbia Exposition, General Plan, April 1892." Location of bridge shown with red arrow. This plan highlights the importance of the bridge as a vantage point for views over the lagoons and fairgrounds. (Source: U.S. Department of the Interior, National Park Service, Frederick Law Olmsted National Historic Site, accessed April 11, 2024, https://www.flickr.com/photos/olmsted_archives/14923978431/in/album-72157646088808879/)





Figure 5. Hermann Heinze, "Souvenir map of the World's Columbian Exposition at Jackson Park and Midway Plaisance, Chicago, Ill, U.S.A., 1893." Location of bridge shown with red arrow. The lagoon to the north of the bridge is labeled "North Pond" on this map. (Source: A. Zeese & Co., Engravers, Chicago, 1892. Library of Congress Geography and Map Division Washington, D.C., accessed April 10, 2024. https://lccn.loc.gov/2010587004)





Figure 6. View of the bridge looking south, over the lagoon. The original configuration of the bridge railings and superstructure, together with the limestone abutments and the limestone retaining wall along the water, are visible in this photo. Note the extent of the retaining wall along the water to the north. (Source: unknown; date unknown, likely circa 1893)





Figure 7. "The Bridge NE of Woman's Building, October 16, 1891." Photographer: C. D. Arnold. This view, looking northwest, shows the original configuration of the bridge trusses and superstructure, as well as the limestone abutments and retaining wall along the water. Note the piers with finials at the base and top of the east and west retaining walls. (Source: Chicago Public Library, C. D. Arnold Photographic Collection, Box 19, Volume XI, Plate 58)





Figure 8. "View from Illinois Building, Looking Southeast, September 18, 1892." Photographer: C. D. Arnold. The bridge is visible at the center bottom of this photograph. The trusses extend above the bridge deck, separating the pedestrian walks at either side from the carriage drive at the center of the bridge. (Source: Chicago Public Library, Special Collections & Preservation Division, accessed April 9, 2024,

https://cdm16818.contentdm.oclc.org/digital/collection/cdarnold/id/330/rec/151)



Figure 9. "View from the East toward the Art Building" from *The Book of the Fair*, Chapter Twenty-Six: "The World's Congress Auxiliary," 1893. Visitors could travel in small boats on the lagoon. The bridge featured in, and afforded views of, the Palace of Fine Arts to the north. (Source: Paul V. Galvin Library Digital History Collection, Illinois Institute of Technology, accessed April 10, 2024, <u>http://columbus.iit.edu/bookfair/00144035.html</u>)





Figure 10. Stereophotograph, "Merry Times on the Lagoon, Columbian Exposition," 1893. Photographer: B. W. Kilburn. In this view, looking north, pedestrians are crossing the bridge. (Source: The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Photography Collection, The New York Public Library, accessed April 10, 2024, https://digitalcollections.nypl.org/items/510d47e0-5f66-a3d9-e040-e00a18064a99)



Figure 11. View of the west end of the bridge and the west abutment, looking north, 1893. (Source: Tim Samuelson, personal collection)





Figure 12. Woman's Building, 1893. The bridge at the south end of North Pond (the future Darrow Bridge) is visible at the bottom right in this photograph (red arrow). Note the ornamental railings at either side of the bridge, the finials at each end, and the two trusses extending above the wood bridge deck. Also note the bridge to the south, at the far left in this photograph (yellow arrow), which appears to feature the characteristic, simple railings present at the fairgrounds. Postcard: the Jones Brothers Publishing Company. (Source: Wisconsin Historical Society, accessed April 12, 2024, <u>https://www.wisconsinhistory.org/Records/Image/IM11402</u>)





Figure 13. View of the retaining wall at the south end of the west abutment, looking south, circa 1890s. (Source: Tim Samuelson, personal collection)





Figure 14. "Revised General Plan of Jackson Park, 1895." The Palace of Fine Arts is called the Field Columbian Museum on this map. (Source: The New York Public Library Digital Collections, accessed April 16, 2024, https://digitalcollections.nypl.org/items/613da8e0-4db6-0133-80da-00505686d14e)





Figure 15. "View of the southern part of the Art Bldg as enlarged from the bridge of World's Fair, South of it," October 24, 1895. Photograph: J. C. Olmsted. This view of the bridge, looking north, shows the modifications to the superstructure and railings implemented in 1895. (Source: Olmsted Archives, Frederick Law Olmsted National Historic Site)





Figure 16. "Jackson Park, Chicago, Illinois." Postcard, undated. Views of the park, its lagoons, and the bridge were a popular subject for postcards in the late nineteenth and early twentieth century. (Source: The Hugh C. Leighton Co., Manufacturers, Portland Maine.)





Figure 17. "Aerial view of Museum of Science and Industry and Surrounding Landscape Looking South," 1931. The bridge is visible near the top of this photograph, as part of the drive encircling the museum and its grounds. (Source: Chicago Park District Records: Photographs, Special Collections, Chicago Public Library)





Figure 18. "Jackson Park: Remodeling of Columbia Basin Bridge," date not legible. This drawing, which bears a Chicago Park District title block, appears to show the bridge as modified in 1895, with annotations to indicate the circa 1930s "remodeling." The drawing shows the existing steel superstructure. (Source: Chicago Park District Records: Drawings, Special Collections, Chicago Public Library)





Figure 19. "Columbia Basin Bridge Details of Retaining Walls," November 9, 1938. The sections shown in this drawing are taken through the edge of the bridge, rather than through the abutments. The drawing appears to propose modifications to the curbs and railings along the sides of the bridge. (Source: Chicago Park District Records: Drawings, Special Collections, Chicago Public Library)





Figure 20. View of the bridge railing, circa 1936. This photo shows the bridge curb and railing after the work shown in the drawings above. (Source: Works Progress Administration photograph, Chicago Park District Records: Photographs, Special Collections, Chicago Public Library)



Figure 21. View of the bridge, circa 1936. This photo shows the bridge sidewalks, curbs, and railings after the work shown in the drawings above. (Source: Works Progress Administration photograph, Chicago Park District Records: Photographs, Special Collections, Chicago Public Library)





Figure 22. View of the bridge sidewalk, curb, and railing, circa 1936. Note that the sidewalk and bridge surface at mid-span appear different than the "remodeled" sidewalk shown in the 1930s drawings. It appears that some wood elements were still present at this time. (Source: Works Progress Administration photograph, Chicago Park District Records: Photographs, Special Collections, Chicago Public Library)





Figure 23. View of the bridge and the museum (formerly the Palace of Fine Arts), looking north, circa 1936. Note the mature trees on either side of the lagoon. (Source: Works Progress Administration photograph, Chicago Park District Records: Photographs, Special Collections, Chicago Public Library)





Figure 24. View of the bridge from the shore of the lagoon, looking southeast, circa 1936. (Source: Works Progress Administration photograph, Chicago Park District Records: Photographs, Special Collections, Chicago Public Library)





Figure 25. View from the Japanese Garden looking north toward the bridge and the museum, circa 1936. (Source: Works Progress Administration photographs, Chicago Park District Records: Photographs, Special Collections, Chicago Public Library)





Figure 26. Clarence Darrow (1857–1938), circa 1922. (Source: U.S. Library of Congress, Prints and Photographs Division, accessed April 17, 2024, https://www.loc.gov/pictures/item/2004671917/)





Figure 27. "Museum of Science and Industries, Jackson Park, Chicago," 1941. The bridge is visible at the bottom of the image in this postcard. (Source: Curt Teich & Co. Records. Newberry Library, accessed April 11, 2024. https://collections.newberry.org/CS.aspx?VP3=DamView&VBID=2KXJA4A96N1Q&SMLS=1&RW=2560&RH=131 3)





Figure 28. View from the shore of the lagoon, looking north toward the bridge and the Museum of Science and Industry. (Source: Photographs by WJE, March 2024, unless otherwise noted)



Figure 29. View of the east abutment, as seen from the west abutment.



Figure 30. View of the west abutment, as seen from the north approach to the east abutment.





Figure 31. View of the east abutment from the southeast, with the south end of the west abutment visible beyond. Note the masonry on the land-facing side of the east abutment. The masonry is similar to the rubble wall exposed where limestone units have been displaced on the water-facing side at the north end of the west abutment and, to a lesser degree, at the water-facing side at the south end of the east abutment.





Figure 32. Stone-paved approach to the east abutment, view from the north.



Figure 33. Stone steps to the south of the west abutment.



Figure 34. Stone paving at the lower walk along the west abutment.



Figure 35. One of two stone haunches on the west abutment of the bridge that historically supported one end of a pony truss.





Figure 36. View of the steel superstructure from below.



Figure 37. View of the steel superstructure from below.



Figure 38. Cast iron post at end of railing.



Figure 39. Typical cast iron railing section and post.





Figure 40. Stone retaining wall at edge of water along west abutment, south end.



Figure 41. The pier, finial, and the lower portion of west abutment wall are partially covered with soil.



Figure 42. Area where walk appears to have been washed out and the retaining wall sections are missing; view looking south.



Figure 43. Severely cracked stone unit at the west abutment wall.





Figure 44. Severely spalled and deteriorated stone unit below a steel framing member at the west abutment wall.



Figure 45. Large hole in the reinforced concrete jacket below a haunch in the east abutment wall.



Figure 46. Vertical crack in the concrete foundation of the east abutment wall.



Figure 47. Displaced stone units at the south end of the east abutment. Note the exposed stone rubble wall construction behind the displaced units.





Figure 48. Undercut portion of west abutment wall where there is a gap below the stone cladding. The underlying rubble stone backup is exposed to view.



Figure 49. Corrosion and total loss of section at steel channels.



Figure 50. Cracking along the bottom of the concrete rib aligned with bottom flange of embedded steel beam.



Figure 51. White deposits hanging from the underside of the slab indicative of water ingress through the slab.





Figure 52. Typical replacement post.



Figure 53. Overall view of the fence enclosing the bridge. This fence was in place during the site visit for this study in March 2024. (Source: Eric Allix Rogers, April 2024)



Figure 54. Following the site visit in March 2024, a fence and gate assembly was installed at either end of the west abutment, preventing access to the area under the bridge. View of the new installation at the south end of the west abutment, looking north. (Source: Eric Allix Rogers, April 2024)



Figure 55. View of the new installation at the north end of the west abutment, looking south. (Source: Eric Allix Rogers, April 2024)