

WEST BRANCH JORDAN STREAM BRIDGE

Acadia National Park Roads & Bridges

Spanning West branch Jordan Stream on Asticou-Jordan Pond Carriage Road

Seal Harbor Vicinity

Hancock County

Maine

HAER NO. ME-42

HAER  
ME  
S-SEHA.V  
12-

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

PHOTOGRAPHS

HISTORIC AMERICAN ENGINEERING RECORD

National Park Service

Department of the Interior

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WEST BRANCH JORDAN STREAM BRIDGE

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ME  
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**LOCATION:** Spanning West Branch Jordan Stream on Amphitheatre carriage road (Around-the-Mountain Loop), 1/2 mile SW of Jordan Pond House, Seal Harbor vicinity, Mount Desert Island, Hancock County, Maine

Quad: Southwest Harbor, ME  
UTM: 19/559900/4907650

**DATE OF CONSTRUCTION:** 1931

**ARCHITECT:** William Welles Bosworth, New York, after an existing structure in Central Park

**ENGINEER:** Paul D. Simpson, for John D. Rockefeller, Jr.

**CONTRACTOR:** B. W. Candage & Son, Seal Harbor, ME

**STRUCTURE:** Stone-faced reinforced concrete filled spandrel arch bridge

**FHWA NO.:** 1700-007S

**OWNER:** Acadia National Park, National Park Service

**SIGNIFICANCE:** Copied from a bridge in New York's Central Park, the West Branch Jordan Stream Bridge bears the Amphitheatre Road across an intermittent stream on a narrow Roman arch. A major structure built to span a minor brook, the structure is largely faced with massive granite blocks, some of are set into adjacent outcrops so as to appear to have been carved from the stone itself.

**PROJECT INFORMATION:** Documentation of the West Branch Jordan Stream Bridge is part of the Acadia National Park Roads and Bridges Recording Project, conducted in 1994-95 by the Historic American Engineering Record of the National Park Service. This is one in a series of project reports. HAER No. ME-13,

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ROCKEFELLER CARRIAGE ROADS, contains more specific information on the park carriage road system.

Richard H. Quin, HAER Historian, 1994

## HISTORY

Construction of the Amphitheatre section of the West Sargent Mountain Road (the southern segment of what is today referred to as the "Around the Mountain" loop) entailed construction of a bridge across the intermittent West Branch of Jordan Stream. John D. Rockefeller, Jr., who built the West Sargent Mountain Road as part of his carriage road network on Mount Desert Island, engaged architect Charles W. Stoughton to design the West Branch Bridge. Stoughton, an established New York architect, had designed bridges for the Rockefeller estate carriage road system in Pocantico Hills and several of the other bridges at Acadia. Rockefeller's carriage road engineer at Seal Harbor, Paul Simpson, surveyed the location of the road and determined the bridge site. He worked with Stoughton on the site details and oversaw the construction of the bridge.

The design of the bridge was based on the Gap Stowe Bridge in New York's Central Park. Although the Central Park bridge was a pedestrian bridge of smaller scale, it had impressed Paul Simpson's father, Charles Simpson, on a 1920 visit to New York to study another park bridge which was the prototype for three other bridges at Mount Desert.

Stoughton issued plans for the structure, which he called "Bridge No. 1,"<sup>1</sup> in October 1930. One plan showed the two elevations for the bridge; although the design was for a curved bridge, the elevations were drawn as orthogonal projections showing the curved walls "stretched out" in a flat plane. The second sheet was a plan view, showing the curved arrangement of the structure from above. At its bottom was a section drawing showing the arrangement of the steel reinforcing rods and construction details of the walls.<sup>2</sup>

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<sup>1</sup>There were three bridges constructed on the segment. Cliffside and Amphitheatre bridges were identified as Bridge No. 2 and Bridge No. 3 respectively.

<sup>2</sup>Charles W. Stoughton, New York, "Asticou-Jordan Pond Road Bridge, Estate of Mr. John D. Rockefeller, Jr., Mount Desert, Maine," construction drawings, 2 sheets, October 1930. Rockefeller Archives Center, Office of the Messrs. Rockefeller, Record Group 2, Homes (Seal Harbor), Box 123 Folder 1242 Map 122.

The bridge was completed late in 1931 at a cost of \$16,889.29.<sup>3</sup>

In September 1932, Rockefeller pondered where to have the date of construction carved. In a letter to Stoughton, he went over several options. He would be satisfied with a date carved on the inner face of the capstone on the posts at the south end of the bridge, but wondered "if a date on a post is a little inappropriate." He also thought of the central coping stone on the southern side of the bridge, a conspicuous location, but this stone was not rectangular and sloped downward. Other locations he considered were the large flat stone coping on the north side near the center of the bridge and flat stones to either side.<sup>4</sup> In the end, the flat coping stone on the north side was selected.

The bridge was inspected in June 1993 by Vanasse Hangen Brustlin, Inc., a Boston structural engineering firm. The VHB report noted a number of minor problems with the bridge, including minor cracking in the arch intrados, mortar joint deterioration, moderate calcium carbonate deposition on the arch intrados and wing walls, and vegetation growing inside the parapet walls. At the crown of the arch, part of the roadway surface had worn away, exposing the concrete shell. To deal with the problems, VHB recommending waterproofing the structure to convey water off the roadway, repointing the mortar joints, removal of the calcium carbonate efflorescence, and construction of a new shell over the arch crown. The report also suggested new drainage arrangements for the uphill side of the bridge to deter water from running downslope onto the roadway.<sup>5</sup>

#### DESCRIPTION

Although the West Branch of Jordan Stream is a minor,

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<sup>3</sup>Vanasse Hangen Brustlin, Inc. and McGinley Hart & Associates, *Historic Bridge Reconnaissance Survey, Carriage Road System, Acadia National Park*, draft edition (Boston, MA: National Park Service, North Atlantic Regional Office, September 1993), 97.

<sup>4</sup>John D. Rockefeller, Jr., New York, to Stoughton, 3 September 1922. Rockefeller Archives Center, Office of the Messrs. Rockefeller, Record Group 2, Homes (Seal Harbor), Box 123 Folder 1243.

<sup>5</sup>Vanasse Hangen Brustlin and McGinley Hart, 98-100.

intermittent watercourse, it is spanned by a substantial arched masonry structure which crosses the stream on a tall Roman arch. This is another example of a large masonry structure being employed to span a minor tributary. Although the graceful arch has a clear span of only 7', the bridge itself is 120' long and stands 24' over the stream. The structure makes a complete 180° semicircle across the stream's ravine, and is gently superelevated over the entire circuit.

The grey granite bridge is constructed around a tall semicircular stone masonry arch resting on stone heels atop a concrete footing. A thin concrete shell covers the haunches and crown of the arch; the spandrel fill is crushed stone. Random ashlar spandrel walls are of cut stone blocks and constructed on a 1:6 batter; they rest on a stepped concrete footing. The parapet walls bordering the 20'-wide broken stone roadway are massive cut stones roughly 4' high and terminating in massive rectangular curtail blocks 6'6" long and 4'6" high. The curtail on the upper east side of the bridge is recessed into a native rock outcrop and seems a natural extension of the ledge.

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Stoughton, Charles W., New York. "Asticou-Jordan Pond Road Bridge, Estate of Mr. John D. Rockefeller, Jr., Mount Desert, Maine." Construction drawings, 3 sheets, October 1930. Rockefeller Archives Center, Office of the Messrs. Rockefeller, Record Group 2, Homes (Seal Harbor), Box 123 Folder 1242 Map 122.

--"Bridge No. 1, Asticou-Jordan Pond Road Bridge, Estate of Mr. John D. Rockefeller, Jr., Mount Desert, Maine, Revision of Sheet No. 2 of Oct. 22/30." Construction drawing, 6 November 1930. Rockefeller Archives Center, Office of the Messrs. Rockefeller, Record Group 2, Homes (Seal Harbor), Box 123 Folder 1242 Map 76.

--"Asticou-Jordan Pond Road Bridge, Estate of Mr. John D. Rockefeller, Jr., Mount Desert, Maine, Sheet No. 5, Revision of Sheet No. 1 of Oct. 22/30." Construction drawing, 6 November 1930. Rockefeller Archives Center, Office of the Messrs. Rockefeller, Record Group 2, Homes (Seal Harbor), Box 123 Folder 1242 Map 122.

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