

United States Department of the Interior
National Park Service

For NPS use only

received APR 24 1987

date entered JUL 31 1987

National Register of Historic Places Inventory—Nomination Form

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic Turn-of-River Bridge

and or common Old North Stamford Road Bridge

2. Location

street & number Old North Stamford Road at the Rippowam River N/A not for publication

city, town Stamford N/A vicinity of

state CT code 09 county Fairfield code 01

3. Classification

Category	Ownership	Status	Present Use
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input type="checkbox"/> building(s)	<input type="checkbox"/> private	N/A unoccupied	<input type="checkbox"/> commercial
<input checked="" type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input type="checkbox"/> yes: restricted	<input type="checkbox"/> government
	N/A being considered	<input checked="" type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial
		<input type="checkbox"/> no	<input type="checkbox"/> military
			<input type="checkbox"/> museum
			<input type="checkbox"/> park
			<input type="checkbox"/> private residence
			<input type="checkbox"/> religious
			<input type="checkbox"/> scientific
			<input type="checkbox"/> transportation
			<input checked="" type="checkbox"/> other: out of service

4. Owner of Property

name City of Stamford

street & number 429 Atlantic Street

city, town Stamford N/A vicinity of state CT 06901

5. Location of Legal Description

courthouse, registry of deeds, etc. Old Town Hall

street & number 174 Atlantic Street

city, town Stamford state CT

6. Representation in Existing Surveys

title State Register of Historic Places has this property been determined eligible? yes no

date federal state county local

depository for survey records Connecticut Historical Commission, 59 S. Prospect St.

city, town Hartford state CT

JUL 1 2 1987

7. Description

Condition		Check one	Check one
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input type="checkbox"/> unaltered	<input checked="" type="checkbox"/> original site
<input checked="" type="checkbox"/> good	<input type="checkbox"/> ruins	<input checked="" type="checkbox"/> altered	<input type="checkbox"/> moved date _____
<input type="checkbox"/> fair	<input type="checkbox"/> unexposed		

Describe the present and original (if known) physical appearance

The Turn-of-River Bridge, erected in 1892-3, is a pin-connected lenticular pony truss. Wrought and cast iron comprise the various members that make up the trusses, while the abutments are stone. The deck is poured concrete over wood. Running roughly north-south, the bridge is adjacent to 20th-century houses in a residential area in northern Stamford, east of High Ridge Road, and approximately 500 feet north of exit 35 on the Merritt Parkway. It carries the former North Stamford Road over the Rippowam River (see map and figure 1).

The bridge spans 53 feet and carries a 21-foot-wide roadway; the bottom of the bridge is 6 feet above the river bottom. Each side of the bridge consists of 4 panels, the end panels being triangle-shaped (photograph 1). Top and bottom chords are segmental in profile, each angling upward and downward respectively toward the middle of the bridge. The top chord and vertical end-posts are made up of 3 rolled plates riveted together using angle-sections on the sides and diagonal lacing bars on the bottom (photograph 2). The sloping bottom chord is composed of a chain of paired pin-connected eyebars with stamped holes. Tapering vertical members, made up of riveted back-to-back angles and lacing bars separate the top and bottom chords and are pin-connected to each chord (photographs 2,3). Diagonal tension stiffeners are located in the 2 center panels and are connected to the same pins. They are round in section and have threaded turnbuckle tighteners. The top and bottom chords meet in a pin connection at the top of the end-posts (photograph 3). These posts have lost their ball finials.

The floor beams are connected to the trusses by means of a bolted hanger at each pin joint (photograph 4). These I-section beams are built up from plates and riveted angles. Web stiffeners are rivet-connected and are found at the hangers beneath each stringer. The center wrought-iron stringers are rolled I sections, while the outside stringers are channel sections. Additional wood stringers, several of which have been damaged, were added when the new concrete deck was poured (photograph 5). The deck is stiffened by diagonal bracing consisting of small diameter rods bolted to stem plates riveted to the deck beams. The deck itself consists of the original wooden deck over which a concrete slab was poured sometime before the construction of the Merritt Parkway. A railing composed of iron straps connected in square and diagonal patterns with stamped rosettes at their junctures runs along the inside of both trusses.

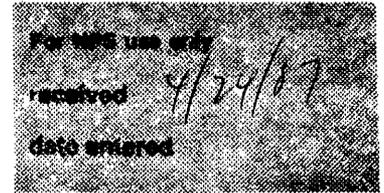
The low abutments consist of large granite and other igneous stone blocks laid in a random pattern. (photograph 6).

Turn-of-River Bridge has retained its historic appearance and its original members continue to function in their original locations. The only alterations have been the removal of decorative elements and the superimposition of a concrete deck.

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National Park Service**

**National Register of Historic Places
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Turn of River Bridge
Stamford, CT



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Item number 6

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Title: Connecticut HAER Survey

Date: 1981

Federal

Depository for survey records: Connecticut Historical Commission
59 S. Prospect St.

City, Town: Hartford

State: CT

8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400–1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500–1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600–1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/ humanitarian
<input type="checkbox"/> 1700–1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1800–1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input checked="" type="checkbox"/> transportation
<input type="checkbox"/> 1900–	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input checked="" type="checkbox"/> politics/government	<input type="checkbox"/> other (specify)
		<input type="checkbox"/> invention		

Specific dates 1892-1893 **Builder/Architect** Berlin Iron Bridge Company

Statement of Significance (in one paragraph)

Built as part of the general improvement of roads in Stamford in 1890s, the Turn-of-River Bridge is a well-preserved, rare example of what was once a common bridge type in Connecticut (criterion C). Patented by William O. Douglas in 1878, the lens-shaped form of the truss is an economical and visually exciting solution to the problem of weight reduction in metal truss bridges. This lenticular pony truss is typical of the hundreds that were built throughout the Northeast by the Berlin Iron Bridge Company between 1878 and 1900. This bridge¹ is one of approximately 20 lenticular pony trusses remaining in Connecticut. Built to accommodate the increased traffic resulting from the growth of Stamford, the bridge is also significant in that it illuminates the governmental process and attitudes toward public works in a developing town. (criterion A).

Historical Significance

In the post-Civil War period, decisions on the location and construction of highways and bridges occupied the bulk of the business sessions of the annual town meetings of Stamford. In fact, the Town of Stamford, during the last third of the 19th century, improved only two facilities other than roads. The approach to this civic duty by the town selectmen was casual and ad hoc, responding to individual petitions for improvements by the affected landowners. At the same time the local population grew from 9700 to 15700, with² residential density increasing by 16% in congested areas and by 30% in rural areas. By the late 1880s this method of road repair had left Stamford highways in deplorable condition, an inappropriate state for a developing community. Fueled by the success of the Yale and Towne Company and the ancillary services that developed around the town, the rate of commercial and home building expanded at the end of the 1880s. As the number of summer residents increased, the ankle-deep mud and various fords became a hindrance to trade and a source of civic embarrassment. In an effort to remedy the situation, in late 1886, the Stamford Advocate and the News launched campaigns for road improvement. Even industrialist Henry R. Towne wrote letters to urge road improvement.³ Finally, the town did move to improve these conditions by reconstructing various river crossings, and, in 1889,

1. Roth, Clouette, Darnell, Connecticut, An Inventory of Historic Engineering and Industrial sites, pp.27, 69.
2. Feinstein, Estelle, Stamford in the Gilded Age. Stamford, CT: Stamford Historical Society, 1973, p.238.
3. Feinstein, op. cit. pp. 145-7.

9. Major Bibliographical References

See continuation sheet

10. Geographical Data

Acreeage of nominated property less than 1 acre

Quadrangle name Stamford

Quadrangle scale 1:24000

UTM References

A	<u>18</u>	<u>622120</u> ⁵⁵	<u>4652120</u> ^{5 385}
	Zone	Easting	Northing
C			
E			
G			

B			
	Zone	Easting	Northing
D			
F			
H			

Verbal boundary description and justification The nominated property includes only the bridge and the embankments that were part of this right-of-way as constructed in the 1890s. Thus all the material relating to this crossing will be encompassed. (See Figure 1)

List all states and counties for properties overlapping state or county boundaries

state	code	county	code

11. Form Prepared By

name/title Steven Bedford, edited by John Herzan, National Register Coordinator

organization Historic Neighborhood Preservation Program date August 25, 1986

street & number 78 Webb's Hill Road telephone (203) 322-6671

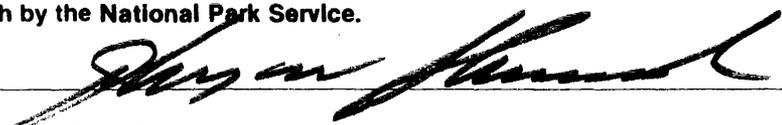
city or town Stamford state CT 06903

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national state local

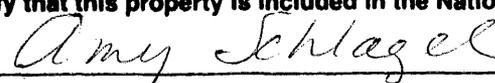
As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature 

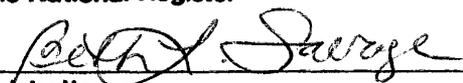
title Director, Connecticut Historical Commission date April 16, 1987

For NPS use only

I hereby certify that this property is included in the National Register

 date 7/31/87

for Keeper of the National Register

Attest:  date 7/31/87

Chief of Registration

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Inventory—Nomination Form

Turn of River Bridge

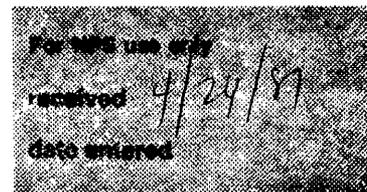
Continuation sheet

Stamford, CT

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buying a steam roller. The first improvements were predictably in the congested center of the town and later improvements focused on the more rural northern areas of Stamford, where most of the town's selectmen lived. Turn-of-River, located on the North Stamford Road (now High Ridge), the major north-south road, was a small manufacturing community that was centered around the Roxbury wire mill on the Mill (now Rippowam) River, founded in 1825, and the Buxton shoe factory. Adequate highways were an absolute necessity because the river was not navigable at this point and goods had to be transported across the river to larger mills to the south. Since at least 1850, a small wooden bridge existed at this point, but by the 1890s it was in poor condition. ⁴

Since the Turn-of-River bridge was one of the last structures built in this public works campaign, there was little debate over its necessity. The first motion for its erection was passed on October 5, 1891 and the selectmen were ordered to obtain estimates for iron and wooden bridges. At the next annual meeting, on October 3, 1892, the selectmen presented their findings and a vote authorized the selectmen to "make a contract for an iron bridge."⁵ The contractor's name was not mentioned, but the contract did go to the Berlin Iron Bridge Company, this being its fourth bridge in town. Work must have begun immediately because the Advocate reported on January 19, 1893, that: "Representatives of the Berlin Bridge Company arrived in town to supervise the erection of the new bridge at Turn-of-River. The iron is all here and Selectman W. R. Lockwood said yesterday that unless the weather should prove very severe, the bridge would be completed so that people could travel over it in a week or ten days." ⁶ Fortunately the stone abutments were finished before the very cold weather arrived. ⁶ On January 26, 1893, the Advocate reported the completion of the span, stating that "The bridge is a substantial one and has long been needed."⁷ The bridge continued in use until the construction of the Merritt Parkway necessitated the realignment of High Ridge Road. In sum, the Turn-of-River Bridge is physical evidence of the growth of Stamford, the public works needed to support this growth, and the decision-making process that enabled its construction.

Engineering significance

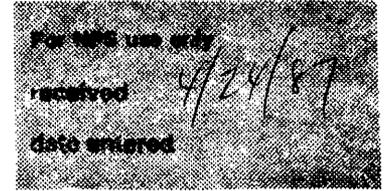
The sudden rise in American business after the Civil War and the greater availability of wrought iron encouraged inventors to develop new bridge truss forms. Few of these patented ideas were practical. However, the lenticular truss patented by William O. Douglas in 1878 led to the erection of hundreds of lenticular truss bridges throughout

4. Madjalani, Jean, Historic Resource Inventory of Turn of River, passim.
5. Town meeting records, book 5, p.128
6. Advocate, January 19, 1893, p.2
7. Advocate, January 26, 1893, p.2

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Turn of River Bridge
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the United States from 1878 to the turn of the century. Built by the Berlin Iron Bridge Company, who had acquired Douglas' patent in 1878 or 1879, the Turn-of-River Bridge is a rare survivor of what was once a common bridge type in New England. By 1889, 600 of these bridges had been built all over the country and by 1900 hundreds more were built and the firm became the largest structural fabricator in New England. This design was so aggressively marketed by the company that every crossing in some towns was spanned by a lenticular. 8 Stamford was no exception. By 1900 every crossing of the Rippowam River was spanned by a lenticular truss and 3/4 of these crossings remain.

The major advantage of this form of truss was that it used approximately 10% less iron than a comparably sized conventional truss, reducing raw material costs and making it a very competitive design economically during a period when labor costs were low. Its disadvantages lay in its fabrication, which required that the ends of each chord segment be machined to a different angle, and the truss lacked lateral stability. The design was modified in 1885 by a second Douglas patent, but this was not used on shorter span trusses such as the Turn-of-River bridge. In this case lateral forces were resisted by the floor system with its plate-girder deck beam, diagonal rods, and wrought-iron, l-section and channel-section stringers which formed a truss.

The lenticular truss is distinct from all others in its profile. Several truss designs use curved top chords, but the lenticular is the only truss whose bottom chord forms a mirror image of the top, creating a graceful symmetrical form. Once erected, the metallurgical structure of wrought iron made it particularly resistive to corrosion in comparison to later steel designs. Thus the design was not only an economical but also an elegant solution to the problem of bridge design.

For the most part, the design of the Turn-of-River Bridge could be considered a standard design for a bridge of its length, and typical of similar span bridges constructed by the Berlin Iron Bridge Company. One design feature does help distinguish it from other lenticulars of the same span. It is a rather wide (21 feet) bridge in relation to its length (53 feet) and, to increase its lateral stability at the endposts, the bottom chord members are pinned rather than bolted through a casting.

Of the lenticular truss bridges built in Connecticut, less than 10% survive. In fact, only 17 pony trusses of this type remain, making the Turn-of-River Bridge significant as a rare and well-preserved survivor of what was once a common, yet elegant feature of the New England landscape (criterion C).

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8. Darnell, Victor, "Lenticular Bridges from East Berlin, Connecticut" IA vol. 5, no.1 (1979), p.27

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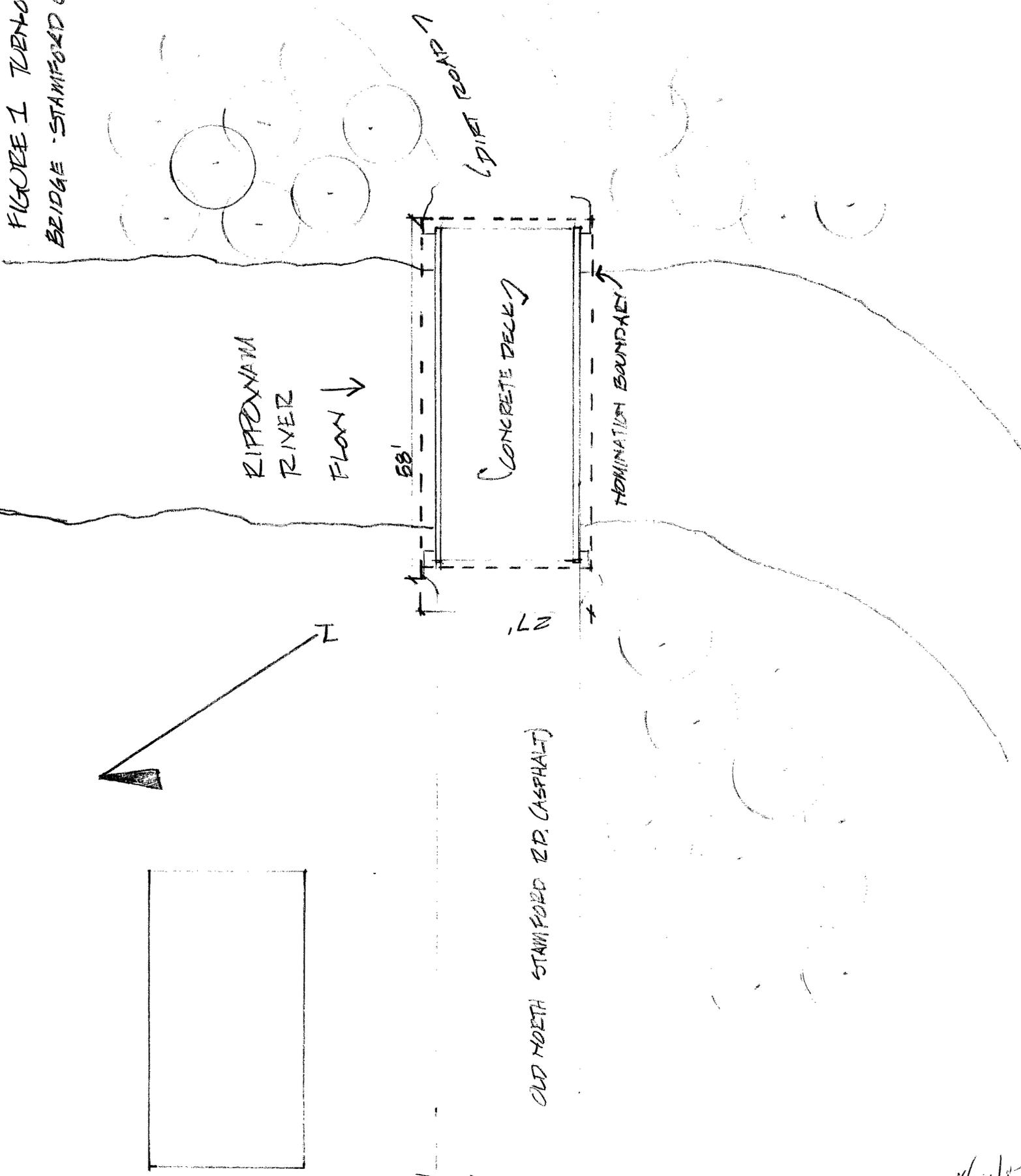
**National Register of Historic Places
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Turn-of-River Bridge
Stamford, Fairfield County, CT

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This bridge has state-level significance because it is one of a dwindling number of lenticular trusses made by the Berlin Iron Bridge Co., Connecticut's most important structural fabricator and, in the late 19th century, the largest such firm in New England. The company used the distinctive profile of the lenticular truss as a selling point to town officials contemplating a bridge purchase. Berlin Iron Bridge made nearly a thousand of these bridges in the last two decades of the 19th century, and sold more than 100 in Connecticut. Only some two dozen survive today.

FIGURE 1 TENT OF RIVER
BRIDGE - STAMFORD CT. 11" = 20'-0"



RIPPONAM
RIVER

FLOW ↓

58'

CONCRETE DECK

DOMINATION BOUNDARY

DIRT ROAD

OLD HOETH STAMFORD RD. (ASPHALT)

