

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Section number \_\_\_\_\_ Page \_\_\_\_\_

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 04001090

Date Listed: 9/29/04

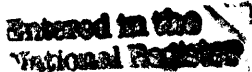
Bridge No. 560  
Property Name

Litchfield  
County

CT  
State

N/A  
Multiple Name

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.



\_\_\_\_\_  
Signature of the Keeper

9-29-04  
Date of Action

=====  
Amended Items in Nomination:

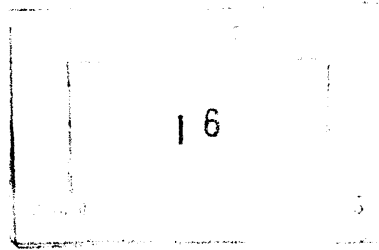
8. Statement of Significance: Period of Significance:

The period of significance for this property's historical and engineering significance under criteria A and C is 1930

This was confirmed with CTSHPO staff by telephone.

DISTRIBUTION:

- National Register property file
- Nominating Authority (without attachment)



**United States Department of the Interior  
National Park Service**

**National Register of Historic Places  
Registration Form**

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable". For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer to complete all items.

**1. Name of Property**

historic name BRIDGE No. 560

other names/site number N/A

**2. Location**

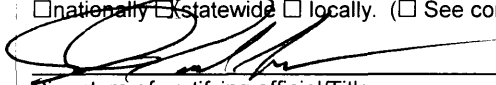
street & number Routes 7 and 4 over Housatonic River  not for publication

city or town Cornwall and Sharon  vicinity

state Connecticut code CT county Litchfield code 005 zip code 06754

**3. State/Federal Agency Certification**

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this  nomination  request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property  meets  does not meet the National Register criteria. I recommend that this property be considered significant  nationally  statewide  locally. ( See continuation sheet for additional comments.)

 08/10/04

Signature of certifying official/Title J. Paul Loether, Division Director, Connecticut Commission on Culture & Tourism  
Deputy State Historic Preservation Officer

State or Federal agency and bureau \_\_\_\_\_

In my opinion, the property  meets  does not meet the National Register criteria. ( See continuation sheet for additional comments.)

Signature of certifying official/Title \_\_\_\_\_ Date \_\_\_\_\_

State or Federal agency and bureau \_\_\_\_\_

**4. National Park Service Certification**

- I hereby certify that the property is:
- entered in the National Register.  
 See continuation sheet.
  - determined eligible for the National Register.  
 See continuation sheet.
  - determined not eligible for the National Register.
  - removed from the National Register.
  - other, (explain): \_\_\_\_\_

Signature of the Keeper

Date of Action

**Entered in the  
National Register**

9-29-04

Bridge No. 560  
Name of Property

Litchfield County, CT  
County and State

**5. Classification**

**Ownership of Property**

(Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

**Category of Property**

(Check only one box)

- building(s)
- district
- site
- structure
- object

**Number of Resources within Property**

(Do not include previously listed resources in the count)

Contributing	Noncontributing	
		buildings
		sites
1		structures
		objects
1	0	Total

**Name of related multiple property listing**

(Enter "N/A" if property is not part of a multiple property listing.)

N/A

**Number of contributing resources previously listed in the National Register**

0

**6. Function or Use**

**Historic Functions**

(Enter categories from instructions)

TRANSPORTATION: road-related

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**Current Functions**

(Enter categories from instructions)

TRANSPORTATION: road-related

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**7. Description**

**Architectural Classification**

(Enter categories from instructions)

Other: open-spandrel concrete arch

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**Materials**

(Enter categories from instructions)

foundation           N/A          

walls           N/A          

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roof           N/A          

other           N/A          

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**Narrative Description**

(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria

(Mark an "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
B Property is associated with the lives of persons significant in our past.
C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A owned by a religious institution or used for religious purposes.
B removed from its original location.
C a birthplace or grave.
D a cemetery.
E a reconstructed building, object, structure
F a commemorative property.
G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

ENGINEERING
TRANSPORTATION

Period of Significance

1915-1935

Significant Dates

1930

Significant Person

(Complete if Criterion B is marked above.)

N/A

Cultural Affiliation

Architect/Builder

Connecticut Highway Department, engineers
C. W. Blakeslee & Sons, contractor

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographic References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
previously listed in the National Register
previously determined eligible by the National Register
designated a National Historic Landmark
recorded by Historic American Building Survey
recorded by Historic American Engineering Record

Primary location of additional data:

- State Historic Preservation Office
Other State agency
Federal agency
Local government
University
Other

Name of repository:

Connecticut Historical Commission,
59 South Prospect Street, Hartford, CT 06106

Bridge No. 560  
Name of Property

Litchfield County, CT  
County and State

## 10. Geographical Data

Acreage of Property less than one

### UTM References

(Place additional UTM references on a continuation sheet.)

1 18 635090 4630830  
Zone Easting Northing

3  
Zone Easting Northing

2

4  
 See continuation sheet

### Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

### Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

## 11. Form Prepared By

name/title Bruce Clouette, Historian

organization Public Archaeology Survey Team, Inc. date March 31, 2003

street & number P.O. Box 209 telephone 860-429-1723

city or town Storrs state CT zip code 06268

### Additional Documentation

Submit the following items with the completed form:

### Continuation Sheets

### Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

### Photographs

Representative **black and white photographs** of the property.

### Additional Items

(Check with SHPO or FPO for any additional items.)

### Property Owner

(Complete this item at the request of SHPO or FPO.)

name Connecticut Department of Transportation

street & number 2800 Berlin Turnpike telephone 860-594-3000

city or town Newington state CT zip code 06141-7546

**Paperwork Reduction Act Statement:** This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*).

**Estimated Burden Statement:** Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

**United States Department of the Interior**  
National Park Service

**National Register of Historic Places**  
**Continuation Sheet**

**Bridge No. 560**

Section number 7 Page 1

**Cornwall - Sharon, Litchfield County, CT**

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**Description:**

Bridge No. 560 (Photograph 1) crosses the Housatonic River, the boundary between the towns of Sharon and Cornwall, at a point known as Cornwall Bridge; the locality's name reflects the series of bridges that have crossed the river there over the years. The present bridge includes six open-spandrel concrete arches, the longest of which, 180 feet, is the river span (Photographs 2 and 3). There are two additional arches on the west side and three on the east side of the river, each of which is 76 feet in span (Photographs 4 and 5). Counting the three 10-foot concrete girder approach spans at each end, the bridge has an overall length of 859 feet. The bridge soars high over the village below, a small community on both sides of the river that includes a few dozen houses, a 19<sup>th</sup>-century railroad depot, two little churches, and a cemetery. Bridge No. 560 replaced a timber covered bridge that crossed the river at a much lower level, connecting present-day River Road South in Cornwall with River Road in Sharon. These local roads, along with the railroad tracks of the Housatonic Railroad, are accommodated by the bridge's smaller arches.

For each arch, there are two parallel ribs spaced 20 feet on center (Photograph 6). The ribs are five feet in width and taper in thickness as they rise toward the crown; the river arch is 3 ½ feet thick at the crown and the others, 2 feet thick. The river arch ribs are connected by eight cross-struts, the other arches have four. Columns with simple bases and capitals rise from the ribs to support floor beams. The outside spaces between columns are joined by arched fascia beams, creating an arcaded effect that is continued along the approach spans. Because the roadway is 33 feet wide, there is an overhang to the bridge supported on extensions of the floor beams, which taper and are rounded at the ends. The large mostly hollow piers between arches each have a central recessed panel; originally, this surface had a hammered finish to contrast with the rest of the concrete, which was smooth, but over the years rehabilitation of the bridge has obscured the different treatments. The roadway (Photograph 7) originally included sidewalks, but these have been lost to widening of the travel lanes. The bridge's railing, a large tubular rail atop a concrete barrier-type base, is modern; the original concrete railing was a balustrade with round-arched openings. Formerly there were pedestrian stairways leading from the north sidewalk to the river banks below.

Completed in 1930, the bridge was designed by staff engineers with the Connecticut Highway Department. The contractor was C. W. Blakeslee & Sons, a New Haven-based contracting firm that built many of Connecticut's large highway projects in the early 20<sup>th</sup> century.

Next page: Proposed Bridge over Housatonic River, Towns of Sharon & Cornwall, General Drawing, May 9, 1929, Connecticut Department of Transportation File 11-05.

**Statement of Significance:**

United States Department of the Interior  
National Park Service

## National Register of Historic Places Continuation Sheet

Bridge No. 560  
Cornwall - Sharon, Litchfield County, CT

Section number 8 Page 1

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### Summary

Bridge No. 560, crossing the Housatonic River between the towns of Cornwall and Sharon, is significant as a large and representative example of the open-spandrel concrete arch, one of the early 20<sup>th</sup> century's major innovations in bridge design (Criterion C). It also has historical significance because it recalls an important episode in Connecticut's transportation history, the establishment of the state highway system in the early 20<sup>th</sup> century (Criterion A). Replacing an antiquated 19<sup>th</sup>-century covered bridge, Bridge No. 560 reflected the period's concern for rising motor vehicle traffic and the need to establish wide, safe bridges on the state's "Trunk Lines," as its major highways were known at the time. Although the State built hundreds of Trunk Line bridges, very few were as large and imposing as the structure at Cornwall Bridge.

### Engineering Significance

The early 20<sup>th</sup> century was a period of great development in the use of reinforced concrete as a bridge-building material. Introduced at the end of the 19<sup>th</sup> century, the technique went through a short period of experimentation and was essentially standardized by 1915. The ingredients were remarkably inexpensive: concrete was just a mixture of sand, gravel, Portland cement, and water. The largest material cost was for the steel reinforcing rods that gave the hardened concrete its tensile strength. Erecting the centerings and building the forms into which the concrete was poured were labor-intensive tasks, but well within the abilities of the carpenters and masons found in any large community. In fact, it is known that some highway officials favored concrete construction because the expenditures for the bridge went to local contractors and workers rather than some faraway bridge company. Although it had only an advisory role in guiding town officials at the time, the Connecticut Highway Department identified reinforced-concrete as the bridge-building material of choice as early as 1907. Concrete had tremendous strength in both compression and tension, it was competitive if not cheaper than steel-girders and trusses, and it was thought to be totally impervious to decay, promising low maintenance costs. In Connecticut as well as many other parts of the country, most state-highway bridges built before World War II were built of reinforced-concrete in one form or another.\*

Concrete slabs and beams sufficed for spans up to around 30 feet, but over that length engineers of the period generally chose arches. There were two main types of arches: filled-spandrel (also called solid-spandrel) and open-spandrel. The former was appropriate for spans of up to about 80 feet; beyond that, the open-spandrel type was usually chosen. The open-spandrel design eliminated the heavy fill, contained between spandrel walls that supported the roadway, and substituted a system of columns and floor beams. This allowed the arch itself to be reduced to the slenderest of ribs and the size of the footings to be minimized, effecting a substantial savings that were only partially offset by the greater complexity of design and construction. Because they eliminated all but the most

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\* Around 1940, changes in the relative importance of material and labor costs, greater ability to move large prefabricated beams, and the fact that most state-highway crossings had already been upgraded spelled an end to the era of the concrete arch.

**United States Department of the Interior**  
National Park Service

**National Register of Historic Places**  
**Continuation Sheet**

**Bridge No. 560**

Section number 8 Page 2

**Cornwall - Sharon, Litchfield County, CT**

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essential structural components and usually consisted of multiple arches, open-spandrel-arch bridges also assumed a graceful appearance that, along with the typically restrained Neo-Classical detailing, recalled the appearance (and the longevity) of Roman aqueducts.

The broad river valley crossed by Bridge No. 560 is typical of the landforms that called for the open-spandrel design. Filled-spandrel arches of the same size would require a massive amount of fill and an extremely thick arch barrel and massive footings for the piers and abutments. To have used trusses for this crossing, even deck trusses, would have necessitated expensive tall piers. Instead, the open-spandrel arch kept the cost of the piers to a minimum and provided the necessary height by means of the arch itself. Because they were used for crossing large river valleys, open-spandrel arches usually ranked among the largest projects undertaken by state-highway departments in the first phase of building their systems. Connecticut is no exception: its six open-spandrel bridges are among the largest and most expensive bridges built in the period.

**Transportation History Significance**

The Connecticut Highway Department was given responsibility for bridges on the state's major highways in 1915, but because Route 1 (the Boston Post Road along the shoreline) was its first priority, the Department did not get to replacing all the state's deficient Trunk Line bridges until the late 1920s and early 1930s. Although located in a relatively sparsely populated quarter, the Cornwall Bridge crossing cried out for improvement. Present-day Route 7 was the major north-south highway in this corner of the state, and Route 4 was the principal east-west route. Yet the bridge that served here until 1930 was a narrow 19<sup>th</sup>-century timber-truss covered bridge. In addition to correcting the problems of width and load-bearing capacity, the new high-level bridge addressed several other objectives: it bypassed the village, freeing state-highway and local traffic from interference with one another; it raised the bridge well above the level of any potential flood damage from the sometimes-turbulent Housatonic River; and it eliminated the grade crossing associated with the railroad line and a nearby freight spur.

Of the six open-spandrel-arch bridges built in Connecticut, this is the largest. The river span, at 180 feet, is the longest single arch, its six arches are the most in any one project, and the total length of open-spandrel arches, 608 feet, is the longest in the state. It cost over \$400,000, a substantial portion of which was provided by Federal-aid funds. Because of the project's importance, it was featured as the frontispiece in the Highway Commission's 1931 *Annual Report*, and it was one of eight bridges cited as "notable and interesting" projects in the Department's 40<sup>th</sup>-anniversary history, published in 1935. In addition to the bridges' function of addressing the needs of rising motor-vehicle usage, the Department praised Bridge No. 560 and other large arches as being "of more than ordinary artistic worth."

Although it has lost a few secondary features, such as its original railing, the pedestrian amenities, and the hammered-concrete surfaces, the bridge remains an outstanding illustration of the open-spandrel type, and its soaring arches continue to serve as a monument to both the technical expertise and aesthetic intents of the engineers responsible for the development of Connecticut's state-highway system.



United States Department of the Interior  
National Park Service

## National Register of Historic Places Continuation Sheet

Section number 9 Page 1

Bridge No. 560  
Cornwall - Sharon, Litchfield County, CT

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### Bibliography:

Clouette, Bruce, and Matthew Roth. Connecticut Historic Bridge Inventory. Connecticut Department of Transportation, 1990.

\_\_\_\_\_. *Connecticut's Historic Highway Bridges*. Newington, Conn.: Connecticut Department of Transportation, 1991.

Condit, Carl W. *American Building: Materials and Techniques from the First Colonial Settlements to the Present*. Chicago: University of Chicago Press, 1968.

Connecticut Highway Commission. *Annual Report*, 1930, p. 154; 1930, p. 151.

Connecticut State Highway Department. *Forty Years of Highway Development in Connecticut, 1895-1935*. New Haven: Connecticut Tercentenary Commission, Publication No. 46, 1935.

Hool, George A., and W. S. Kinne. *Reinforced Concrete and Masonry Structures*. New York: McGraw-Hill Book Company, 1924.

Legat, Arthur W. *Design and Construction of Reinforced Concrete Bridges*. London: Concrete Publications, 1948.

McCullough, Conde B. *Economics of Highway Bridge Types*. Chicago: Gillette Publishing co., 1929.

Urquhart, Leonard C., and Charles-Edward O'Rourke. *Design of Concrete Structures*. New York: McGraw-Hill Book Company, 1926.

Waddell, J. A. L. *Economics of Bridgework*. New York: John Wiley and Sons, 1921.

United States Department of the Interior  
National Park Service

## National Register of Historic Places Continuation Sheet

Section number 10 Page 1

Bridge No. 560  
Cornwall - Sharon, Litchfield County, CT

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### Verbal Boundary Description:

The nominated property includes the bridge, abutments, and piers.

### Boundary Justification:

The nominated property embraces the entire historic structure.

**United States Department of the Interior**  
National Park Service

**National Register of Historic Places**  
**Continuation Sheet**

**Bridge No. 560**

Section number Photographs Page 1

**Cornwall - Sharon, Litchfield County, CT**

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**All Photographs:**

1. Bridge No. 560
2. Cornwall - Sharon, Litchfield County, CT
3. PAST, Inc. Photo
4. March 2003
5. Negative filed with PAST, Inc., Storrs, CT

**Captions:**

Overview of bridge from west end, showing south side, camera facing east  
Photograph 1 of 8

River span, south side, camera facing northeast  
Photograph 3 of 8

River span, north side, camera facing southeast  
Photograph 3 of 8

West spans, including span over River Road, camera facing northeast  
Photograph 4 of 8

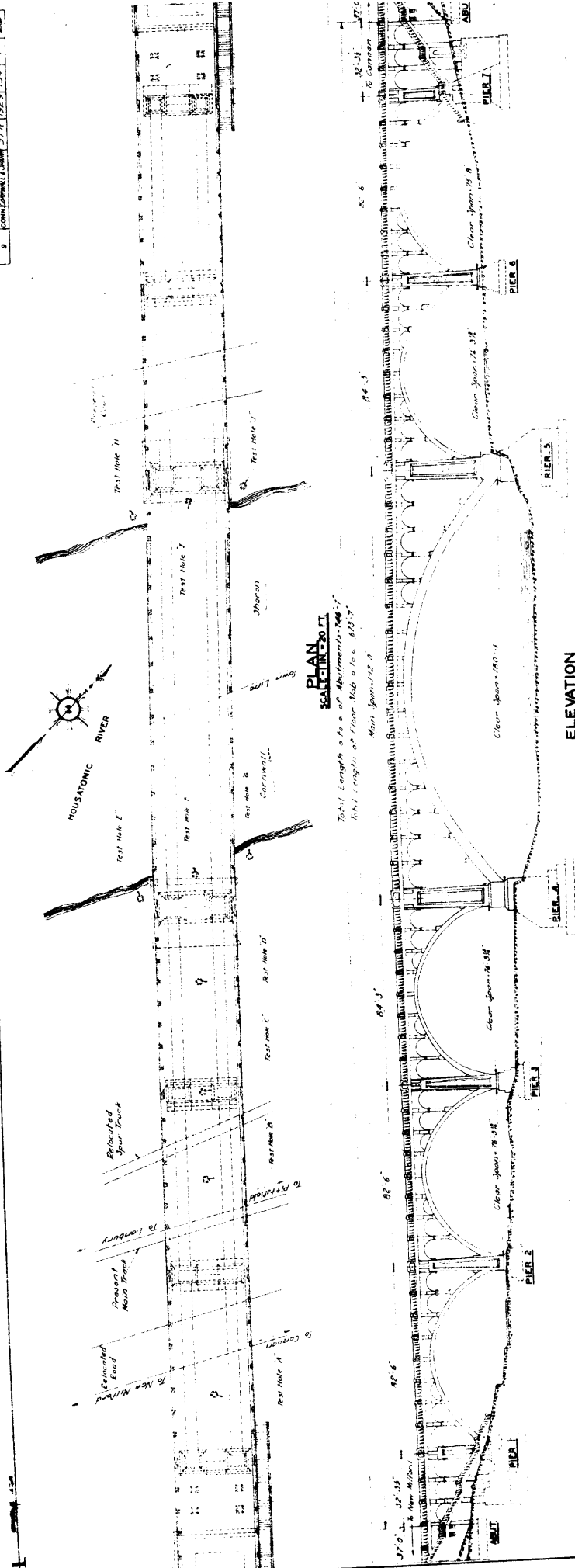
East spans over railroad and River Road South, Cornwall Bridge depot in background, camera facing north  
Photograph 5 of 8

Detail of underside of bridge, north side from east end, camera facing west  
Photograph 6 of 8

Roadway level from east end, camera facing northwest  
Photograph 7 of 8

Detail of west abutment, camera facing west  
Photograph 8 of 8

REV. NO.	DATE	BY	CHKD. BY	REASON
1	10-2-28	J. J. [unclear]	[unclear]	[unclear]
2	10-2-28	[unclear]	[unclear]	[unclear]
3	10-2-28	[unclear]	[unclear]	[unclear]
4	10-2-28	[unclear]	[unclear]	[unclear]
5	10-2-28	[unclear]	[unclear]	[unclear]
6	10-2-28	[unclear]	[unclear]	[unclear]
7	10-2-28	[unclear]	[unclear]	[unclear]
8	10-2-28	[unclear]	[unclear]	[unclear]
9	10-2-28	[unclear]	[unclear]	[unclear]



**PLAN SCALE 1/8" = 1'-0"**

Total Length of Arch Rib 610.0'   
 Total Length of Floor Slab 610.0'

**ELEVATION SCALE 1/8" = 1'-0"**

FEDERAL AID PROJECT NO. 37-A

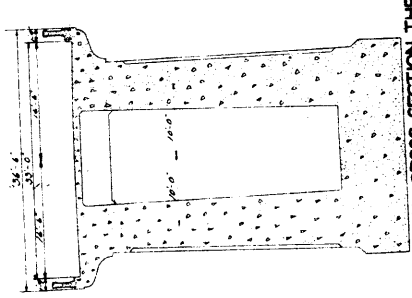
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 APPROVED *[Signature]* DEPUTY HIGHWAY COMMISSIONER

Rev. No. 6650

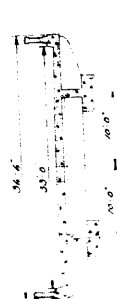
Revised 10-2-28   
 7-22-30

CONNECTICUT STATE HIGHWAY DEPARTMENT   
 TOWNS OF CORNWALL & SHARON   
 PROPOSED BRIDGE OVER HOUSATONIC RIVER   
 GENERAL DRAWING

NO.	TITLE	DATE
1	General Drawing	10-2-28
2	Arch Rib	10-2-28
3	Arch Rib	10-2-28
4	Arch Rib	10-2-28
5	Arch Rib	10-2-28
6	Arch Rib	10-2-28
7	Arch Rib	10-2-28
8	Arch Rib	10-2-28
9	Arch Rib	10-2-28
10	Arch Rib	10-2-28
11	Arch Rib	10-2-28



TYPICAL CROSS SECTION THRU PIER   
 SCALE 1/8" = 1'-0"



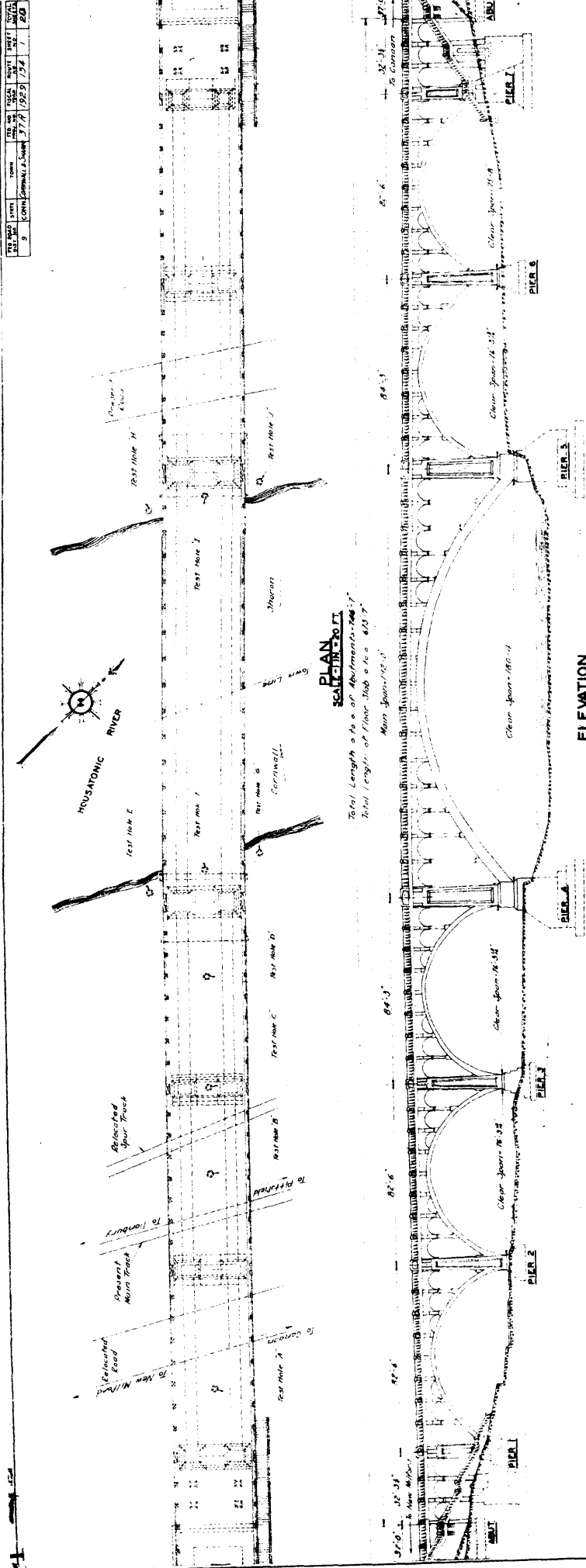
TYPICAL CROSS SECTION THRU ARCH RIB   
 SCALE 1/8" = 1'-0"

DESIGNED BY *[Signature]*   
 *[Signature]*

RECOMMENDED   
 APPROVED   
 APPROVED

NOTES   
 1. [unclear]   
 2. [unclear]   
 3. [unclear]   
 4. [unclear]   
 5. [unclear]   
 6. [unclear]   
 7. [unclear]   
 8. [unclear]   
 9. [unclear]   
 10. [unclear]   
 11. [unclear]

DATE	BY	REVISION
1927	J. S. [unclear]	1
1928	J. S. [unclear]	2
1929	J. S. [unclear]	3
1930	J. S. [unclear]	4
1931	J. S. [unclear]	5
1932	J. S. [unclear]	6
1933	J. S. [unclear]	7
1934	J. S. [unclear]	8
1935	J. S. [unclear]	9



APPROVED *[Signature]*  
STATE HIGHWAY COMMISSIONER

APPROVED *[Signature]*  
DEPUTY HIGHWAY COMMISSIONER

File No. 65160

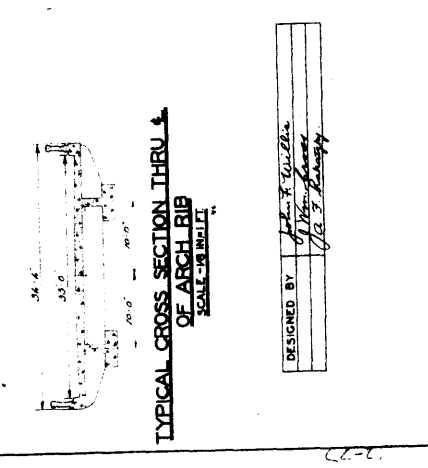
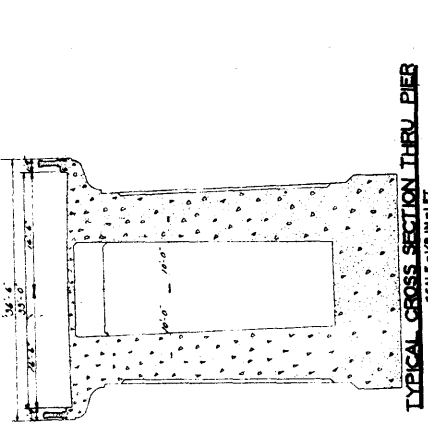
Revised 11-5-28  
7-22-30

CONNECTICUT  
STATE HIGHWAY DEPARTMENT  
TO WMS OF  
CORNWALL & SHAFON  
PROPOSED BRIDGE OVER  
HOUSATONIC RIVER  
GENERAL DRAWING

FEDERAL AID PROJECT NO. 37-A

**LIST OF DRAWINGS**

NO.	TITLE	DATE
1	General Drawing	11-5-28
2	East Abutment	11-5-28
3	East Sparrow	11-5-28
4	East A Head Abutment Span	11-5-28
5	Abutment	11-5-28
6	Abutment	11-5-28
7	West Abutment	11-5-28
8	West Sparrow	11-5-28
9	West Abutment	11-5-28
10	Flow & Spillway Details	11-5-28
11	Details of Spans	11-5-28



DESIGNED BY *[Signature]*  
J. S. [unclear]

NOTES

1. [unclear]

2. [unclear]

3. [unclear]

4. [unclear]

5. [unclear]

6. [unclear]

7. [unclear]

8. [unclear]

9. [unclear]

10. [unclear]

11. [unclear]