Massachusetts Cultural Resource Information System

Scanned Record Cover Page

Inventory No:	NFL.924
Historic Name:	Schell Memorial Bridge
Common Name:	
Address:	
City/Town:	Northfield
Village/Neighborhood:	West Northfield
Local No:	
Year Constructed:	
Architect(s):	Shaw, Edward S.
Architectural Style(s):	
Use(s):	Abandoned or Vacant; Other Transportation
Significance:	Engineering; Transportation
Area(s):	NFL.H: Mount Hermon Station Road
Designation(s):	Nat'l Register DOE (6/26/1981)

Commonwealth of Massachusetts
Massachusetts Historical Commission
220 Morrissey Boulevard, Boston, Massachusetts 02125
www.sec.state.ma.us/mhc

NFL.924

MASSACHUSETTS HISTORIC BRIDGE INVENTORY

Municipality: Northfield District: 2

Street name/Rt. #: E. Northfield Rd.

Over

Street name/Rt. #: Connecticut River

Bridge key #: MUN 236 002 100 Photo ##s: Dist 2 photos; Barnes & Jarmis photos

Bridge plan #: N-22-2 HBI 46:21A, 25A-30A

Common/historic name: Schell Bridge

Current owner:

UTM coordinates: AASHTO rating: 0 (1-6-89)

****

National Register status (insert date)

Entered: Potential:

Eligible: 6/26/81 Non-eligible:

Field rating: (3) 2 1

****

Date built (source): 1901-03 (plans, B.H.)

Date(s) rebuilt (source):

Builder (source):

Designer (source): Edward S. Shaw, cons. eng. (plans)

****

Structural type/materials: 310/410

riveted, 3-span, steel Pennsylvania-type through truss with polygonal upper and lower chords, with sub-ties and sub-verticals. Two 5-panel approach spans flank 22-panel main span. Structure acts as a 3-span continuous truss under live load, but as a simple span with a pair of cantilevered end spans under dead load only. Unusual end bearings allow for horizontal movement (for expansion and contraction of trusses under temperature changes) while using heavy coil springs to counter uplift on the ends of the trusses when the bridge is under live load.

Overall length: 515 Deck width/layout: 18' out-out

Skew: -

Main unit, # spans: 1 lengths: 352'

Approaches, # spans: 2 lengths: both 80'

Plaque: none seen location: -

Alterations, unusual features, comments:

large-block, coursed granite ashlar cutwater piers; U abutments with pyramidal-capped pylons and low stone parapets.

highly ornamental Gothic portal bracing; and simple Gothic arch sway bracing between trusses over the 2 piers. Cast-iron finials on upper chords at portals. 4-rail guardrails inside of trusses, with embossed fittings.

1932 repairs - timber stringers and plank deck replaced by present steel stringers, timber plank/wood block deck

1936 - some damage to truss lower chords in area of western pier due to March 1936 flood; scouring and washout behind west abutment.

ca. 1960 - some welded plate reinforcement of lower chord near E. abutment.

Trusses heavily rusted; lower chords severely deteriorated. Trusses partially off western abutment bearings.

Visual quality (bridge and setting): High X Average ___ Low ___

Site integrity: Retained X Violated ___

Describe: Bridge spans a bend in the Connecticut River, with low, terraced flood plains on western side of river, and fairly steep bluffs on the east. Both banks are wooded now, although a 1904 postcard photo shows that the western floodplain was farmed at that time to the rivers edge.

History of bridge and site:

Prior to 1903, highway traffic between Northfield and South Vernon, VT. (location of the nearest railroad station) had crossed the Connecticut River on the lower level of a double-deck, timber covered bridge which carried the tracks of the Central Vermont Railway on its upper deck. (This combination railroad/highway bridge was located a half-mile downstream of the Schell Bridge; the 1904/1936 steel deck truss bridge which replaced the timber bridge is numbered N-22-26.) The Town of Northfield originally proposed to replace the highway portion of the old double-decked bridge, with a new, utilitarian 3-span simple truss bridge. But Francis Robert Schell (of Northfield and New York City) then offered to pay for the new bridge if it could be made a memorial to the memory of his parents. Schell's offer was accepted, and the design of the bridge was altered. The present graceful profile, the ornamental Gothic details in the steelwork, and the handsome stone abutments, were all part of these alterations. Reportedly, there were other decorative features designed for the bridge, but never actually built.

Sources: Engineering Record, 17, 24, 31 Dec. 1904, pp. 716-17, 738-40, 774-76.
B.H. ✓ G.E. Ainsworth & Assoc., "Structural Evaluation Report," 2 vols., 1977.
Plans - 1901

Old B.H. ✓

****

Summary statement of significance:

The 3rd-oldest of 5 known Pennsylvania truss bridges in the MDPW data base, and a unique (in Massachusetts) variant of the basic Pennsylvania type. Of considerable engineering interest for its design as a 3-span continuous truss under live load, but as a simple truss span with cantilevered ends under dead load. Includes the 11th-longest single span in MDPW data base. A gracefully profiled bridge, with some unusual Gothic Revival decorative elements, in a beautiful natural setting. An interesting facet of the social history of Northfield, in that the bridge was given to the town by a New York City/Northfield resident.

Only major alteration to the bridge is the replacement of the original timber stringers and deck, but the steelwork (particularly the lower chords) is severely deteriorated.

Statement prepared by: S.J. Roper Date: 8/29/89

****

Field survey by: S.J. Roper, MDPW Historic Bridge Specialist Date: 9/13/85

NFL.924

BRIDGES PREVIOUSLY REVIEWED BY M.H.C. -- CONCURRENCE REAFFIRMED

	Municipality	On/Over	Br. Dept. No.
Bridge:	Northfield	E. Northfield Rd./Connecticut R.	N-22-2

has previously been reviewed by the ~~Massachusetts Historical Commission~~ Keeper of the National Register and was determined to be: eligible for listing in the National Register on 6/26/81.

After a review of all known bridges of comparable structural type identified in the M.D.P.W. statewide computerized database, the M.D.P.W. now reaffirms its concurrence with that initial determination.

Summary statement of significance:

A possibly unique variation of an uncommon metal truss bridge type; a bridge with considerable visual appeal, in addition to its engineering interest.

Statement prepared by: S.J. Roper, MDPW Historic Bridge Specialist

Date: 8/29/89

NFL 924

HISTORIC BRIDGE INVENTORY & EVALUATION

Schell Bridge

Date: 9/29/80

Municipality Northfield S.H. X N.S.H. town owned bridge

Street Name & Route # Route 142

Over Connecticut River

Street Name & Route #

Bridge No. N-22-2 Bridge Key # (FAS 236) Dist. 2

CRITERIA FOR DETERMINATION OF HISTORIC SIGNIFICANCE

I. Builders Contribution

Quantity

Unknown ______ Several ______ (1-10) Many ______ (10 or more)

Name of Builder: Mr. F. (Francis Robert) Schell

Designer: Edward S. Shaw, Boston

Plaque: Yes ______ No. ______

I. AGE: Pre 1850 ______ 1850-1900 ______ 1900-1930 ~~1903~~ 1901

I. TECHNICAL

Bridge Type Pratt thru Truss (arched cantilever end spans)

Bridge Width 17'

Total Length of Bridge 512'

Number of Spans: 3 Span Lengths 80' 352' 80'

Patented: Yes ______ No ______ Unknown ______

Load Carrying Capacity: Adequate ______ Inadequate ______

Configuration: Unique ______ Unusual ______ Common ______

Types of Materials: Steel with two masonry abutments & two masonry river piers (cut granite mortared)

List Special Features and Modifications:

Repaired - 1958; new deck - 1932.

The arches at each end are not fixed to the abutments but are attached with coil springs to counteract the outward pull of the large center arch.

NFL 924

IV. ENVIRONMENTAL

Aesthetics: Unusual _____ Good _____ Common _____
Site Integrity: Retained _____ Violated _____
History of Bridge and Area:
Mr. F. R. Schell built the bridge for his own convenience
+ then presented it to the town.

V. ECONOMICS

Owner: Municipal X County _____ State _____ Federal _____

R.R. _____

What is your recommendation?
Maintenance _____ Replacement X Rehabilitation _____
Are materials available for Rehabilitation: Yes _____ No ____
Is structure scheduled for replacement? Yes X No _____

VI. PHOTOS - INDICATE SHOTS TAKEN

1. Setting
2. Builders Plaque
3. 3/4 View
4. Thru View
5. Under View
6. Elevation
7. Joint & Connections
8. Machinery
9. Decorative Features

VII. COMMENTS & CONCLUSIONS

1. In your judgement, does this bridge have historic value? Yes___ No ___
2. Please explain your answer to #1

3. Additional Comments required on back of page.

Preparer: _____
Title: _____
Date of Survey: _____

INCLUDE TOPO SHEET SHOWING LOCATION

PW-H-306-5M-2-'27-No. 8115

Station _____ L. O. _____ Orig 142 · Bridge No. N-22-2

GENERAL HIGHWAY BRIDGE REPORT

NFL 924

City or Town Northfield — Date of record Dec 21, 1927

Name of bridge Schell — Original cost $

On road from Northfield — To Vermont

Name of stream or railroad Connecticut River

Built by State, Town, County or Railroad Mr. F. Schell and presented to town

Maintained by —Town—

Contributions to cost or maintenance by whom

Date of construction 1903 — When last repaired

Type of bridge Thru Steel Truss (Cantilever) — Material built of Steel

If steel or iron give name of Bridge Co.

Total length—0 to 0 515 — c to c bearing — clear span {Skew / Square}

Width—0 to 0 — c to c Fences or trusses 20.0 — Between wheel guards 17.0

No. spans 3 — Length of spans {Skew / Square} 2@ 81.5 & 1-352.0

Sidewalks None — Location None — Width No

Abut. built of Cut & Coursed Granite cemented with conc. filler wall

Piers built of Cut & Coursed & cemented Granite

Condition of abut. Good — Condition of piers

Surface built of 3½" Plank — Condition ½ good ½ poor

No. and size of floor stringers 18± 4x12 9 Good 9 fair — Condition — Age

Floor—~~Headroom~~ under bridge W.S. 48.0 — To low water — To high water 3' over piers ±

Weight allowed on bridge — Posted Not — Location of St. Ry. tracks None

Name of St. Ry. Co. None — Are St. Ry. tracks in use? None

Describe pipes, wires, or structures on or under bridge Tel & Elec. Light on N. side attached To out side of Truss

Space below to be used for future data

Letter from Phillips, District Engineer, March 22, 1928.
Painting, 1926, = #2011.
Weight of steel = 265 tons.
No lights
(Filed under Inter-Departmental Agreements Chap. 38, Resolves 1927

REPAIRED 1958. (FROM 1966 DIST. SURVEY)

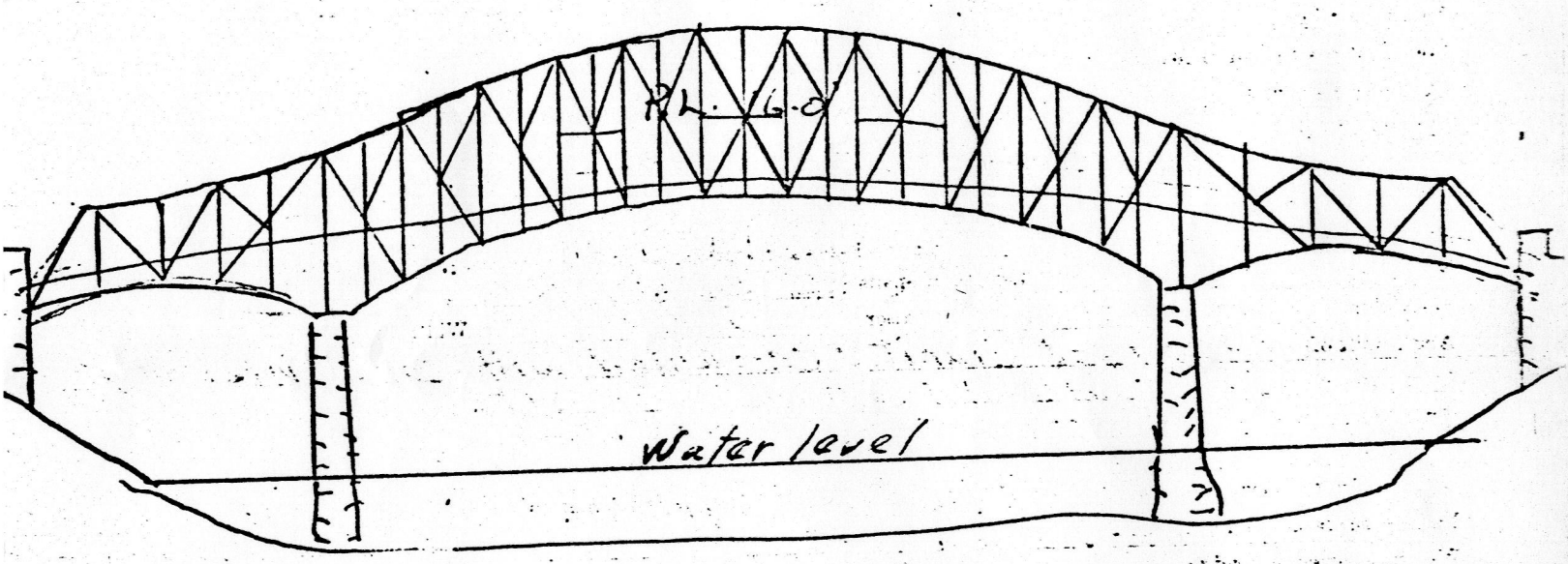
163
352
515 + 6" lapping

NOTE:—Sketch and remarks on other side

Report by

NFL. 924

(1927)

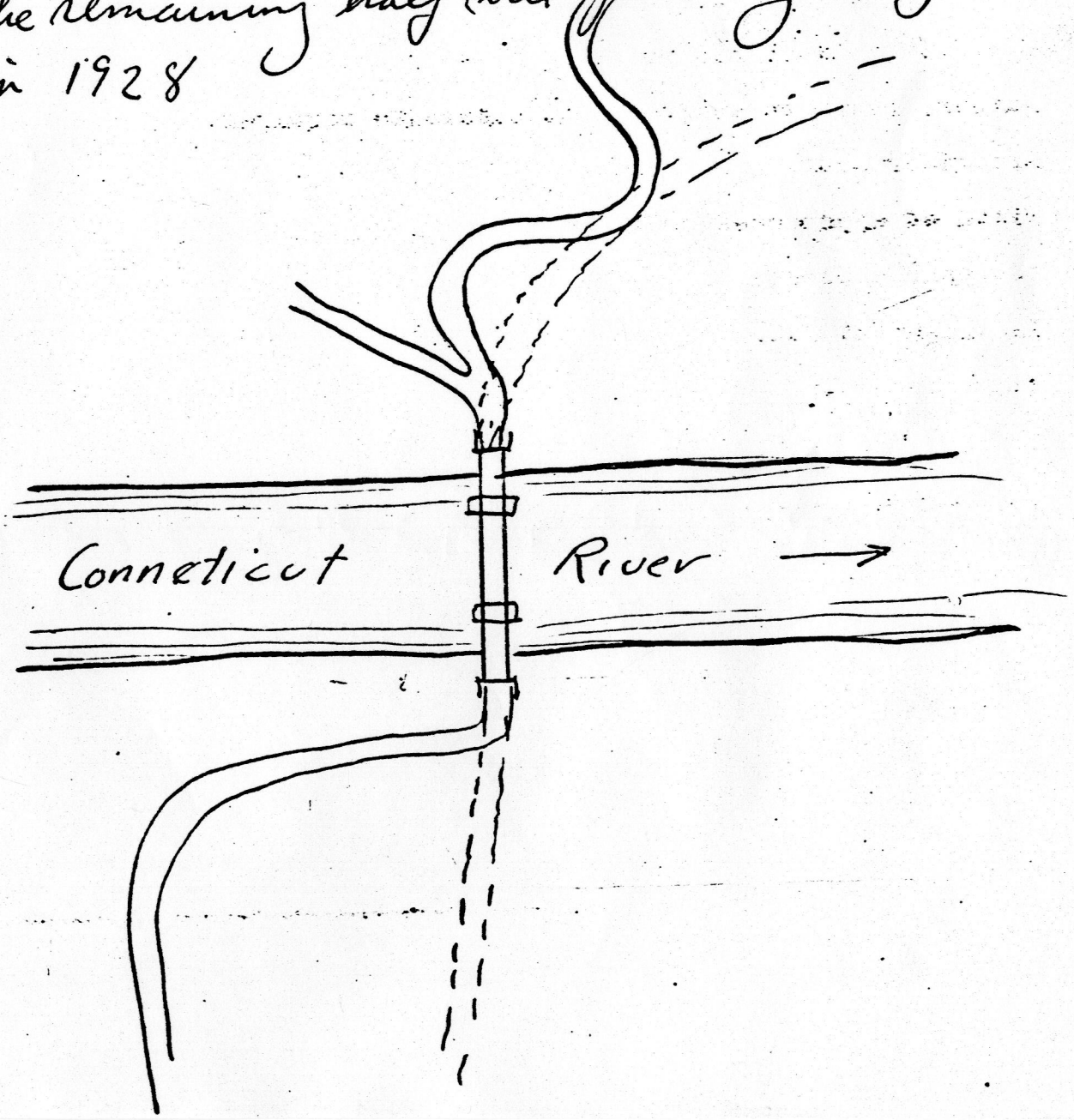


Bridge was repaired by some new stringers & flooring over part of bridge. Also it was painted in 1926
It cost about $500 per year to maintain
90 to 95 percent of traffic over bridge is foreign. This statement made by Mr. Warner town official

NFL-924 (1927)

This bridge is rather narrow but it will handle the traffic over this location for a long time. The alignment is very poor but can be altered with out much trouble. The present floor system is poor and expensive to keep up. The trusses seem to be strong enough to stand a steel stringer and wood block floor.

Two years ago it was painted and it look good. The wood floor was half done in 1927 and the remaining half will proberly be finished in 1928



NFL.924

SUPPLEMENTARY BRIDGE REPORT

Town Northfield Bridge No. N-22-2 Date Dec 21, 1927

Angle of skew 0° Auto Route No. Approx. life of bridge existing

General Condition and Appearance Steel Good

Height of abutments and piers above ground 8.0'

Type and condition of wings ⌊⌋ good

Are St. R.R. tracks in use? None

Any contemplated change in St. R.R. operation None

Is stream navigable and to what extent? for pleasure & small scow type boats

Annual cost of maintenance

Data for New Bridge

What type of bridge? Steel truss or suspension

Width of roadway required 26'

Number, location and width of sidewalks required None

Are wider abutments needed? yes

Width of approaches required 20' RW

Do approaches need repair yes

Is alignment O.K. Poor

Is grade O.K. yes

Can grade be raised? yes

Can present bridge be altered to satisfy present requirements? This bridge with a new floor system would last many years (30 years)

Remarks:

Signed

NFL 924

March 28, 1936 1.

Schell Bridge

The Schell Bridge over the Connecticut River on the road from Northfield to Vernon, VT was built in 1903 by Francis Robert Schell. This is an arched cantilever through steel truss bridge and has two masonry abutments and two masonry river piers. The two end spans between abutments and piers are 80 ft. each, and the main span between the masonry piers is 352 ft. There are 6"x10" timber for wheel guards, and the distance between them is 17'-6". There is an iron pipe railing on either side of bridge with its pipe posts bolted to top of wheel guard. The iron fence consists of a top 3" pipe with three 2" pipes below, the spacing of pipes being 11"; the posts are 3½" Pipes spaced 5 ft. on centers. The road surface is of wood block pavement and is in fairly good condition. This bridge is maintained by Town of Northfield.

During the flood the east abutment and the easterly 80' span were not damaged by the flood waters, altho' the water obviously reached the top of bottom chord at the center there being debris still in evidence there. On the central span of 352 ft., there was no damage done to the bottom chord except on the three panels at westerly end on the upstream side. The downstream sections on these same panels were slightly twisted, but damage seemed negligible. The two easterly panels on west approach span were badly twisted and distorted by ice impact too. It was apparent that due to a turn in the river, the brunt of the flood waters was directed at the west abutment and the westerly road approach. The telephone cable and electric service lines which were run across the bridge on a timber out-rigging bolted to truss verticals were dropped into the river, but temporary lines were laced to the pipe rail fence on inside of truss on upstream side of bridge. This line was carried straight across the Plotzick farm on the west end of the bridge instead of following the former location along the curved approach road; the approach road has been entirely washed away for a distance of three or four hundred ft. wide about two hundred ft. west of west abut. The top farms west of bridge were seriously damaged by two parallel channels about 150' wide ploughed thru the entire width of farms from the point at the curve in the river, 500 ft. north of bridge to a point about 300 ft ± south of bridge. These two channels have a strip of land about 100 wide between them, and they run directly across the road at the westerly approach to bridge. The channels are between twenty and thirty ft. deep.

The western abutment was severly undermined by the action of the swollen river at this point. The shore abutments are 2'-6" granite walls supported by huge concrete block pedestals 5'-6"x8'-5" on four corners which are connected by arched diaphragm 2'-6" concrete walls. These walls did not extend down to the bottom depth of the concrete block pedestal; the height of the pedestals could not be measured as the bank was not undermined to that depth. However the bank was undermined to a distance of about 5' below arch of diaphragm walls, this depth being about 20 ft. below road grade. As the river scoured the bank under the arched diaphragms the earth filling between the wing walls washed out leaving a hole about 18 ft. wide and 20 ft. deep at the western end of bridge, extending the entire width of road. The

bank was scoured for a distance of 15 ft. above, and below the western abut. a tree was undermined and is now lying in the river at the downstream end of abutment.

The two river piers and easterly abut. appear to be undamaged by flood. Debris was retained on the top of bottom chord over entire length of western 80' span.

The bottom chord of the bridge consists of two 12"x$\frac{1}{4}$" plates, 13" apart, each plate has a 3"x3"x3/8" L at top and bottom with top and bottom lattice work consisting of 2$\frac{1}{2}$"x$\frac{1}{4}$" straps.

The floor beams are 26" built up girders; the web plate is 3/8" thick; with two 3"x3"x3/8" L at top and bottom. At each end of the beams there are 4-3"x3"x3/8" L stiffeners, all located within 2'-6" of either end.

The 9-12" I Bin stringers placed across the width of bridge 2'-2" on centers.

The floor consists of 2$\frac{1}{2}$ planking on 4" planking.

The spans between the eastern and western abut. and river piers have 5 panels with a 16 ft. spacing, and the main span between the river piers has 22 panels with a 16 ft. spacing.

The bottom chord for three panels east and two west of the West Mas. Pier were badly twisted and distorted by impact of ice and debris on the upstream side. The vertical member at the pier and the two verticals east and west of the West Pier were badly twisted and bent. The bottom chord, downstream, west of West Abut. is slight twisted, but is not seriously damaged.

The bottom sway bracing, consisting of 3"x3"x3/8" angles is badly twisted on the five panels east and west of the West Abut.

The steel plates and angles on the sides of the Vertical Posts directly over the piers, are bent, and should be straightened or renewed. This is on the West Piers.

The upstream fro[illegible] pedestal on the Vernon Side has settled to[illegible]rd the river about $\frac{1}{2}$".

.asl .

NFL.924

THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS
HIGHWAY BRIDGE REPORT

TOWN OF Northfield May 9. 1966

1. Name of Bridge Schell Bridge N-22-2 Cost ?
2. Name & Number of Road East Northfield Rd. #9
3. Location .40 Mile West State Hwy. Rte 10 & 63
4. Built by State, Town or County Private B. F. R. Schell
5. Who maintains it? Town
6. Stream or railroad crossed by bridge Connecticut River
7. Date of construction 1903 When last repaired 1958
8. Type of bridge Through Truss Material built of Wrought Iron
9. If built of steel or iron, give name of Bridge Co. --
10. Length of bridge 515 feet. Width of Roadway 17.4 Ft.
11. No. of Spans 3 (2@ 80'+1@ 352') Square 512 C to C Skew -- C to C
12. Clear Span Square 496' Skew --
13. Abutments Cut Granite Mortared
14. Piers Cut Granite Mortared
15. Condition of abutments Good Condition of Piers Good
16. Type of surface BCI on Wood Plank on Wood Blocks Condition BCI Fair, some of blocks replaced with wood plank
17. Stringers 32 Bays of 9-I beams on Steel floor beams
18. Headroom 90'+
19. Weight of load now allowed on bridge 8 tons

REMARKS On original list

REPORTED BY W. G. Thompson

SCHELL MEMORIAL BRIDGE

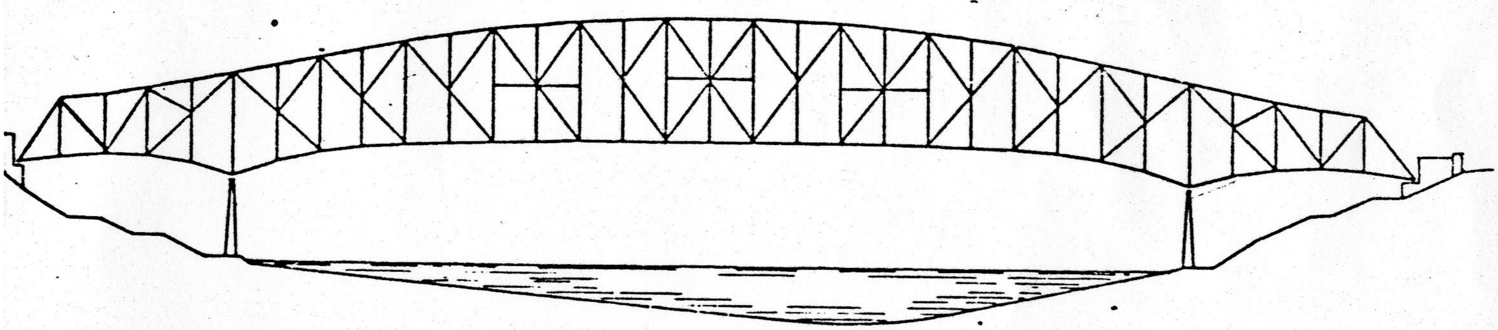
WEST NORTHFIELD ROAD
NORTHFIELD, MASS.

BRIDGE NO. N-22-2

STRUCTURAL EVALUATION REPORT

VOLUME II

APPENDIX B - PHOTOGRAPHS



SELECTMEN :

FERNAND A. CARON, Chairman
CAROLYN B. PARENTEAU
EDWARD I. METCALF

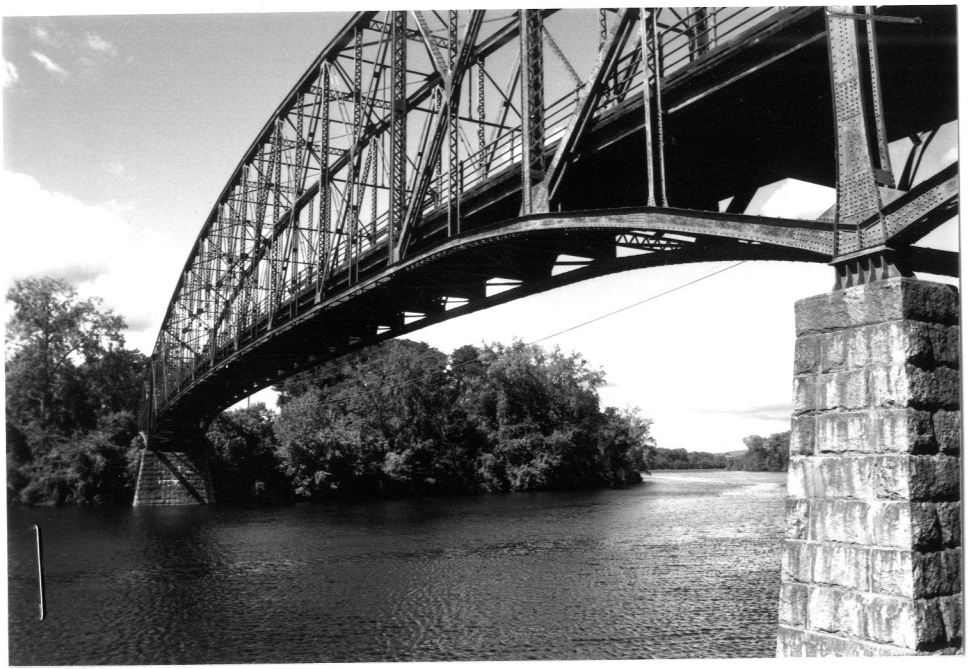
ENGINEER :

GORDON E. AINSWORTH & ASSOCIATES, INC.
20 SUGARLOAF STREET
SOUTH DEERFIELD, MASSACHUSETTS

CONSULTANT :

BARNES AND JARNIS, INC.
61 BATTERYMARCH STREET
BOSTON, MASSACHUSETTS

JANUARY 1977

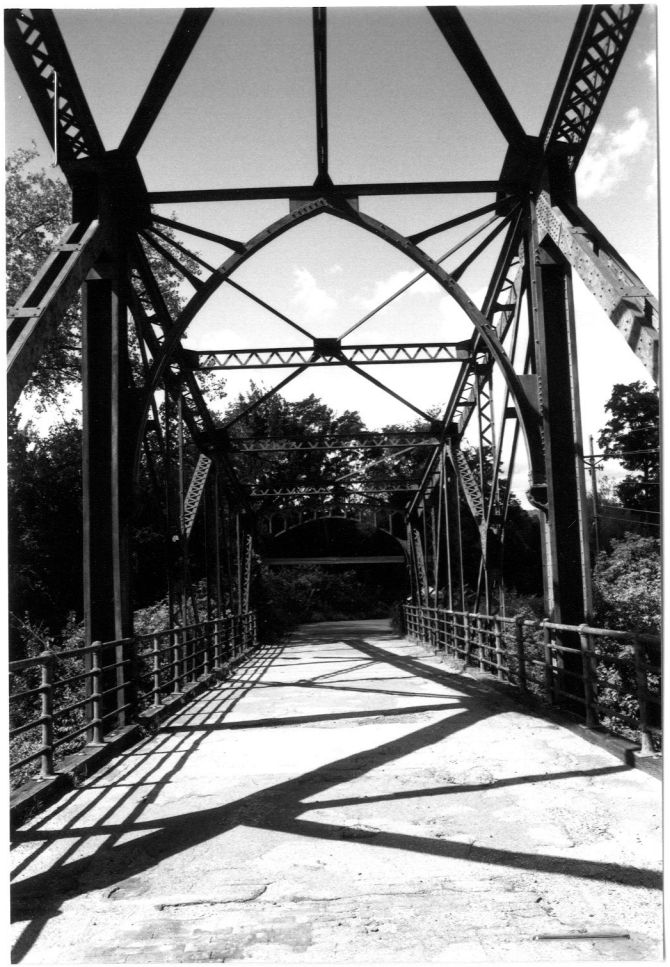


FROM SE

W PORTAL FROM E

FROM SW

FROM E ABUTMENT, LOOKING W. (9-13-85)



LOOKING WEST, INTO WESTERN SPAN

E PIER, FROM S

9-13-85

WOODEN BLOCK PAVEMENT

9-13-85

NFL.924

HAER INVENTORY

Historic American Engineering Record
Department of the Interior, Washington, D.C.

1. SITE I.D. NO

2. INDUSTRIAL CLASSIFICATION

3. PRIORITY

4. DANGER OF DEMOLITION? (SPECIFY THREAT) ☐ YES ☐ NO ☐ UNKNOWN

5. DATE 1903

6. GOVT SOURCE OF THREAT OWNER ADMIN

7. OWNER/ADMIN

8. NAME(S) OF STRUCTURE
Schell Memorial Bridge

9. OWNER'S ADDRESS

10. STATE MA COUNTY FRANKLIN CITY/VICINITY Northfield CONG. DIST.

STATE COUNTY COUNTY NAME CITY/VICINITY CONG. DIST.

11. SITE ADDRESS (STREET & NO)
West Northfield Road at Connecticut River

12. EXISTING SURVEYS ☐ NR ☐ NHL ☐ HABS ☒ HAER–I ☐ HAER ☐ NPS ☐ CL6
☐ CONF ☐ STATE ☐ COUNTY ☐ LOCAL ☐ OTHER

13. SPECIAL FEATURES (DESCRIBE BELOW)
☐ INTERIOR INTACT ☐ EXTERIOR INTACT ☐ ENVIRONS INTACT

14. UTM ZONE EASTING NORTHING SIGN
SCALE ☒ 1:24 ☐ 1:62.5 ☐ OTHER QUAD NAME NORTHFIELD, MA

UTM ZONE EASTING NORTHING SIGN
SCALE ☐ 1:24 ☐ 1:62.5 ☐ OTHER QUAD NAME

15. CONDITION 70 ☐ EXCELLENT 71 ☐ GOOD 72 ☐ FAIR 73 ☐ DETERIORATED 74 ☐ RUINS 75 ☐ UNEXPOSED 76 ☐ ALTERED 82 ☐ DESTROYED 85 ☐ DEMOLISHED

16. INVENTORIED BY P. H. Stott AFFILIATION DATE 10/14/1980

17. DESCRIPTION AND BACKGROUND HISTORY, INCLUDING CONSTRUCTION DATE(S), HISTORICAL DATE(S), PHYSICAL DIMENSIONS, MATERIALS, EXTANT EQUIPMENT, AND IMPORTANT BUILDERS, ENGINEERS, ETC.

3-span modified Pratt truss steel highway bridge over the Connecticut River. The center span is arched and the end spans are cantilevered. Supports consist of 2 piers and 2 abutments with the center span between piers being 352 feet in length and the cantilever spans to the abutments being each 80 feet. The trusses are spaced 20 ft. apart providing a 17'-2" roadway. The bridge, designed by Boston engineering Edward S Shaw, in 1901 was built and then presented to the town by Francis Robert Schell. Ordinary low water (spring and fall) is 53 feet below the top of the piers. East pier has a fixed bearing; the west pier has a rocking ~~bearing~~ expansion bearing.

(CONT OVER)

18. ORIGINAL USE PRESENT USE ADAPTIVE USE

19. REFERENCES—HISTORICAL REFERENCES, PERSONAL CONTACTS, AND/OR OTHER
Gordon F. Ainsworth & Associates, South Deerfield, Mass., consulting engineers. 1977 Structural Evaluation Report.
"The Schell Memorial Bridge," Engineering Record vol. 50 (Dec. 17, 24, 31, 1904), pp. 716-717; 738-740; 774-776.
HAER New England Inventory.

(CONT OVER)

100 ☐ YES ☐ NO 21. HCRS REGION 22. PUBLIC ACCESSIBILITY ☐ YES, LIMITED ☐ YES, UNLIMITED ☐ NO ☐ UNKNOWN 23. EDITOR INDEXED

DISTRICT? ☐ YES ☐ NO NAME DISTRICT I.D. NO

The Schell Memorial Bridge replaced an old timber bridge carrying a track of the Central VT RR on its upper deck and a town highway below. This bridge had become unsafe from age and increase in the railroad traffic, and the new bridge was originally projected simply to take the place of the highway portion of the old bridge and to shorten the distance between the Northfield Seminary and ~~the~~ Moody Auditorium, where large numbers of people assemble at the Summer conferences, and the Boston & Maine / Central VT Station at South Vernon Junction.

Hence the project was first designed for utilitarian purposes only with 3 simple and independent spans. but the project being made known to Schell, he offered to bear the expense of the bridge, the abutments of which were to bear bronze tablets in memory of his father and mother. It was then decided to alter the design of in order to make it more appropriate for its purpose as a memorial bridge.

As a result the relative span lengths and the outline of the bridge in elevation were altered, the 3 spans being covered by continuous trusses with curved upper and lower chords, and more elaborate and expensive portals, railings + abutments were built. (Owing to late alterations, the results were not all the designer had hoped.)

The bridge was erected in an unusual fashion. The side spans were erected first in the normal way, on false work, but the middle cantilevered span was erected ~~as~~ by a cableway suspended from ~~towers~~ temporary wooden towers erected on the opposite banks of the river. The description of this operation is detailed in the third of the Engineering Record accounts.

NFL.924

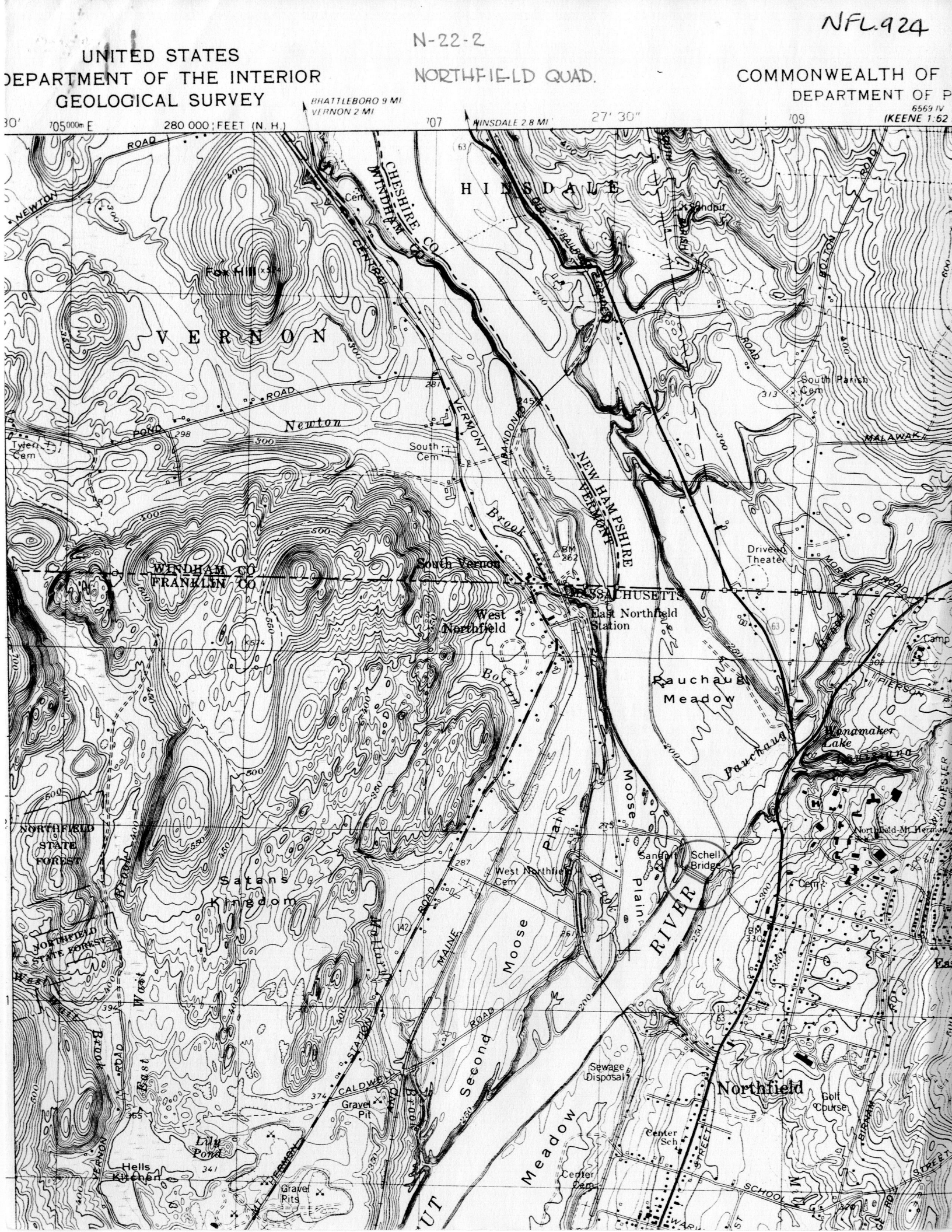
N-22-2

NORTHFIELD QUAD.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

COMMONWEALTH OF
DEPARTMENT OF P

6569 IV
(KEENE 1:62



Schell Memorial Bridge
Spanning the Connecticut River on East Northfield Road
Northfield
Franklin County
Massachusetts

HAER No. MA-111

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

INDEX TO PHOTOGRAPHS

Schell Memorial Bridge
Spanning the Connecticut River on East Northfield Road
Northfield
Franklin County
Massachusetts

HAER No. MA-111

Martin Stupich, Photographer, Summer 1990

MA-111-1 Oblique view from northeast abutment, looking west

MA-111-2 Long oblique view from northeast abutment, looking west

MA-111-3 Detail of lower chord and piers, looking southwest

MA-111-4 Detail of floor system from river bank, looking northwest

MA-111-5 Detail of east portal, showing Gothic detailing

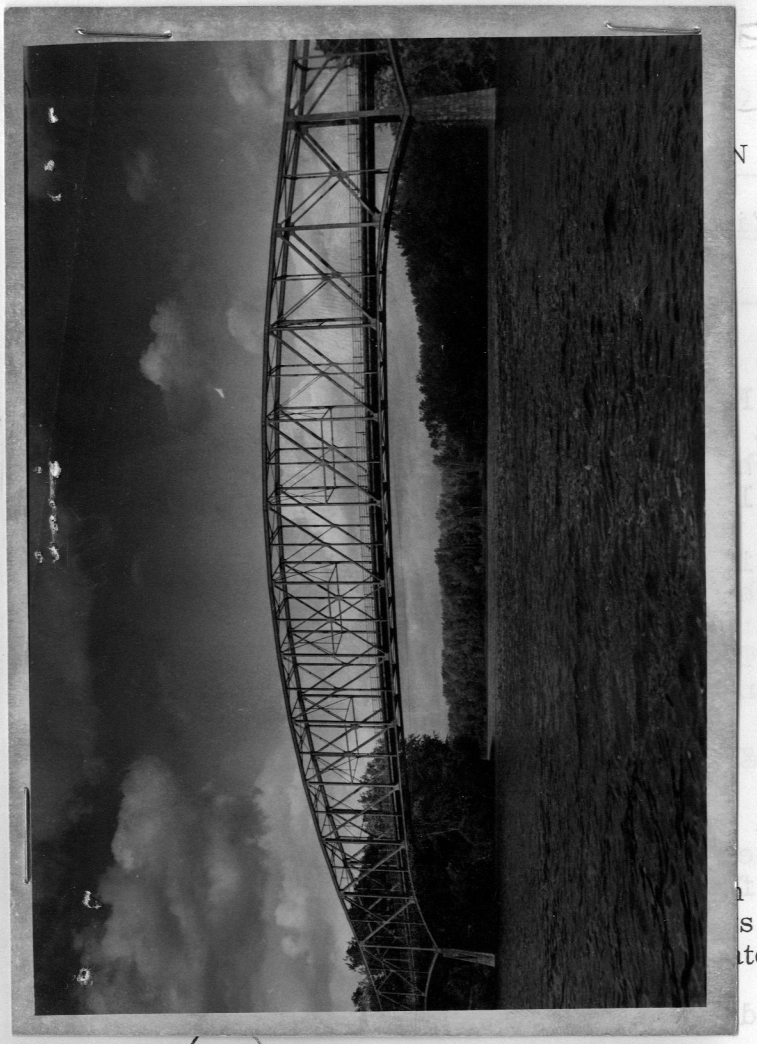
MA-111-6 Detail of abutment wall at east portal

MA-111-7 Detail of lower chord connection to endpost at southeast corner

MA-111-8 Detail of bearing shoe connection at southeast corner

HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTIONS

HAER No. MA-111-1



In Area no.	Form no.
S H	1901

NFL.924

1. Town Northfield, Mass

Address East Northfield Rd

Name Schell Memorial Bridge c.1901

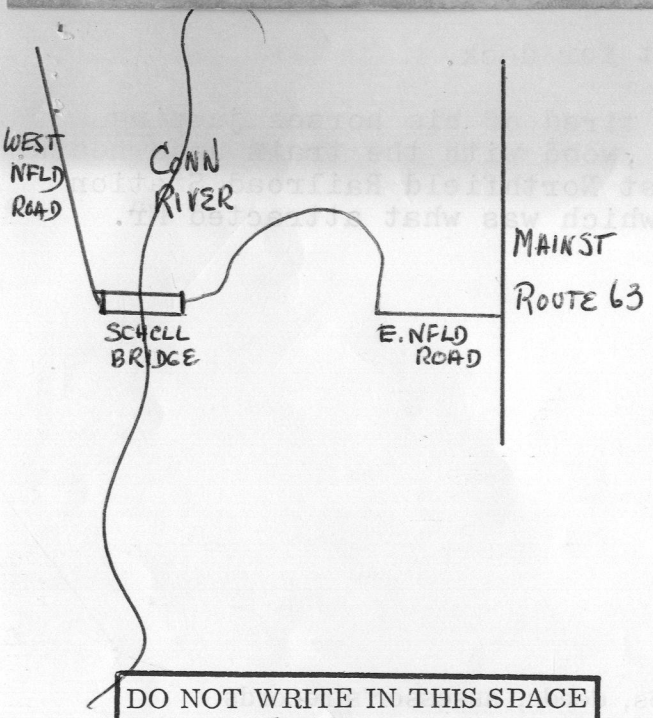
Present use Vehicular traffic

Present owner Town of Northfield

3. Type of structure (check one)

bridge	x	pound	
canal		powder house	
dam		street	
fort		tower	
gate		tunnel	
kiln		wall	
lighthouse		windmill	

other



5. Description

Date Started in 1901, completed 1903

Source Schell Bridge Comm. Bridge Plans-Town Hall

Construction material 2 parallel Pratt trusses with cantilivered ends

Dimensions 2 piers and abutments of ~~granite. 352 feet~~ span

Setting Over Conn River in E. Nfld

Condition Poor, limited vehicular traffic

DO NOT WRITE IN THIS SPACE
USGS Quadrant

MHC Photo no.

6. Recorded by ~~Grace Randall~~

Organization Schell Bridge Study Comm.

Date 1977

(over)

NFL.924

7. Original owner (if known) Robert Schell

Original use Vehicular traffic

Subsequent uses (if any) and dates Same

8. Historical significance.

This bridge was given to the town by Francis B.Schell, a New York financier, ,Northfield summer resident,who built Schell Chateau, as a memorial to his father and nother -Mary and Robert Schell. Started in 1901-completed in 1903.The cost not to exceed $32,000. It is unique as an individual paid for the structure.

The bridge is structurally unique as it has two parallel modified Pratt trusses ,cantilivered at both ends. The two piers and two abutments of granite. Center span 352 feet, cantelivered span to abutment is 80feet, The trusses are spaced 20feet apart. There is a wood plank deck and wood stringers. The roadway is 17 feet 2 inches.

It is also unique in that it connects the east and west sides of the town. Northfield is the only town in New England which is situated on BOTHsides of the river.

The plan of the bridge is in the Town Archives in the Town Hall.

A special Schell Bridge Study Committee is in process of trying to save the bridge for vehicular traffic- or finding other transportation route to replace this structure.

Built by
New England Structural Co., Boston, Edward S.Shaw.

Town Report 1904. $27,010 was paid the rest for deck.

It is local legend that Mr. Schell,became tired of his horses jumping on the old structure. This was two level ,wood with the train underneath. Whatever, it was the connection to the west Northfield Railroad Station and the Conferences in East Northfield , which was what attracted Mr. Schell to Northfield.

9. Bibliography and/or references such as local histories, deeds, assessor's records, early maps, etc.

Northfiled Town Report 1904
Ainsworth Associates Engineers Report p.15, Vol 1, 1977
Puriton Outpost-Parsons
Bridge Plan-Northfield Archives

Original yellow form: Eligibility file
Copies: Inventory form ✓
Town file(w/corresp.)
Macris
NR director ____

Community: Northfield

MHC OPINION: ELIGIBILITY FOR NATIONAL REGISTER

Date Received: 28 Sep 05 Date Due: Date Reviewed: Oct 19, 2005

Type: _x_ Individual __District (Attach map indicating boundaries)

Name: Schell Memorial Bridge Inventory Form: NFL.924

Address: East Northfield Road over Connecticut River

Requested by: Marie Ferre, Northfield HC

Action: __Honor __ITC __Grant __R & C
Other:

Agency: Staff in charge of Review:

INDIVIDUAL PROPERTIES

_x Eligible
__ Eligible, also in district
__ Eligible only in district
__ Ineligible
__ More information needed

DISTRICTS

__ Eligible
__ Ineligible
__ More information needed

CRITERIA: _x_ A __B _x_ C __D

LEVEL: __Local _x_ State ___National

STATEMENT OF SIGNIFICANCE by Phil Bergen

Bridge evaluated, found eligible 1990 Keeper DOE 1981

Reviewed at request of local commission to see whether bridge is still eligible, 15 years after original eligibility determination.

Since 1990 bridge remains closed to traffic, but retains its integrity. Friends group started. Smith engineering survey. UMass underwater examination of base. No abnormalities found on dive. Unusual Pennsylvania truss structure across river. Bridge privately donated to town by NY businessman.

Town voted to demolish bridge 1987.

Bridge still remains eligible for NR listing.

NFL. 924

DETERMINATION OF ELIGIBILITY (MHC OPINION)

TO: _____ RETURN TO REVIEWER BY _____ (DATE)

FROM: _____

DATE: _____

TOWN: NORTHFIELD

PROPERTY: N-22-2 (Schell Bridge) over Connecticut River
(NAME AND ADDRESS)

1. Does this property meet the criteria for NR eligibility?

☒ YES

☐ NO

A. Criteria
   a. events
   b. lives
   c. characteristics
   d. information

B. Local _____ State _____ National _____

2. Statement of Significance: OR Why not eligible?

NO BRIDGE SURVEY FORM from DPW yet.

Reviewed Fall 1980.

Reviewed 4/2/81 at DPW meeting. Agreed on eligibility based on uniqueness.

E. Amadon to locate McGuire & Answorth (v.1) reports for next DPW meeting and to supply MHC w/ bridge form.

Form received 4/7/81

Reviewed 5/13/81 DOE to be sought

☐ DOE LETTER WRITTEN

FILED IN ER FILE _____

_____
(DATE)

NFL.924

TO: BETSY FRIEDBERG RETURN TO REVIEWER BY _____ (DATE)

FROM: WM. SMITH

DATE: 12/10/90

TOWN: NORTHFIELD

PROPERTY: N-22-2 EAST Northfield RD. OVER Connecticut River
(NAME AND ADDRESS)
"Schell Bridge"

1. Does this property meet the criteria for NR eligibility?
   - [X] YES determined eligible by the Keeper of the National Register 6/26/81
   - [ ] NO

   A. Criteria
      a. events
      b. lives
      c. characteristics
      d. information

   B. Local _____ State _____ National _____

2. Statement of Significance: OR Why not eligible?

1901 - 1903 Riveted 3 SPAN Steel Pennsylvania through truss. (

unique variation of an uncommon Bridge type:

Graceful designed bridge in an outstanding

natural setting.

the bridge is designed to function as a 3 SPAN continuous

truss under live load, and a simple truss span with cantilevered

ends under dead load.

Recorded Summer 1990 by KHER team - MASS Bridge proj

☐ DOE LETTER WRITTEN FILED IN ER FILE _____

_____ (DATE)

Concur - MAC

NFL.924

Lowell L-15-19 Bridge Street over Merrimack River

1937 Three span cantilever Warren type through truss. This visual landmark is a rare example of a major structural type in Massachusetts. Adjacent to the Locks and Canals Historic District (NR, NHL).

Lowell L-15-21 Textile Avenue over Northern Canal, Merrimack River

1896 Three span pinned steel Pratt deck truss. Oldest example of an uncommon highway bridge type in Massachusetts. It spans over the Northern Canal and Great River Wall of the Locks and Canals National Register Historic District.

Montague M-28-18 Bridge Street over B & M Railroad/ C.V. Railroad

1897 Latticed type through truss designed by Edge Moor Bridge Company of Delaware. It is the only known example of this unique bridge type..

Northfield N-22-2 East Northfield Road over Connecticut River

1901-1903 Three span steel Pennsylvania through truss. Unique variation of an uncommon bridge type. Gracefully designed bridge in an outstanding natural setting. The bridge is designed to function as a continuous truss under live loads and a simple truss with cantilevered ends under dead load.

Stockbridge S-26-3 Butler Road over Housatonic River

1881 Pin connected wrought iron half through Pratt pony truss with Borneman type stone pedestals rising above abutments. A rare and unique bridge design by a world famous bridge designer - George Morison. Bridge has national significance.

Waltham W-4-9 B & M Railroad over State Rte. 60, Linden Street

1894 Steel lattice through truss with quad web system. Intact example of an uncommon bridge type severely skewed. Reviewed and entered in the National Register of Historic Places 9/28/89.

Windsor W-41-11 Windsor Bush Road over Phelps Brook

1893 One span iron and steel Ball Queen post. One of only two surviving examples of Charles Ball unique pipe truss bridge.

The following bridge does not appear to meet National Register criteria at present. However, as this bridge reaches 50 years of age, its National Register eligibility should be reassessed. NFL.924

Boston/Chelsea	B-16-17/C-9-6	United States Route 1 over Mystic River

1950 Three span cantilever Warren type web through truss. Double deck bridge is a Boston landmark.

Montgomery/Russell	M-30-8/R-13-18	I90 over U.S. Route 20, Westfield River

1957 Eight span, two continuous span riveted steel Pratt deck truss. A landmark bridge and the only Pratt deck truss to be designed with continuous deck truss spans.

The following bridges did not appear to meet National Register criteria for individual listing. However, the bridges are within, or adjacent to an historic district or potentially eligible historic district, and plans for replacement should take into consideration potential impact to adjacent properties.

Fitchburg	F-4-12	State Rte. 31/Rollstone Street over North Nashua River, Broad Street

This bridge is located adjacent to lower Rollstone Bridge (1870 Parker pony truss).

Greenfield/Montague	G-12-20/M-28-1	Montague City Road over Connecticut River

This bridge stands between East Greenfield and Montague city. Though inventory is incomplete, significant historic resources are in both areas. There is a group of turn of the century cottages on Montague City Road that may be eligible for listing in the National Register.

Lawrence	L-4-24	Salem Street over B & M Railroad

This bridge is adjacent to mill building and Victorian Gothic church; however, the level of information on this area is not well documented at this time.

The MHC concurs with the preliminary findings of MDPW that the following bridges do not appear to meet criteria for listing in the National Register of Historic Places.

Amesbury/Newburyport	A-7-16/N-11-17	I-95 over Merrimack River

NFL.924

Boston/Quincy	B-16-368/Q-1-50	Long Island Bridge over Quincy Bay
Conway	C-20-7	Hickory Ridge Road over South River
Erving/Montague	E-10-5/M-28-5	Paper Mill Road over Millers River
Montague	M-28-20	C.V.R.R. over North Leverett Road/ Sawmill River
Northfield	N-22-26	B & M Railroad over Caldwell Road/ Connecticut River
Westfield	W-25-4	United States Route 20 over Westfield River

If you have any questions, please feel free to contact William Smith of this office.

Sincerely,

Judith B. McDonough

Judith B. McDonough
Executive Director
State Historic Preservation Officer
Massachusetts Historical Commission

JBM/WS/kab

cc: Frank Bracaglia, MDPW

NFL.924

MASSACHUSETTS ★ HISTORICAL ★ COMMISSION ★
A CommonWealth to Keep

March 6, 1991

Mr. Anthony J. Fusco
Division Administrator
Federal Highway Administration
Transportation Systems Center
55 Broadway - 10th Floor
Cambridge, MA 02142

ATTN: Mr. H. Pearlman

RE: Massachusetts Bridges, National Register Eligibility

Dear Mr. Fusco:

The Massachusetts Historical Commission has reviewed the historic bridge inventory forms prepared by the Massachusetts Department of Public Works. The Massachusetts Historical Commission concurs with the preliminary findings of Massachusetts Department of Public Works that the following bridges meet criteria for listing in the National Register of Historic Places.

Bourne (Bourne Bridge) B-17-4 State 28 over Cape Cod Canal

1934 Three span continuous truss with deck/through riveted steel truss, Warren type truss web. Central span is arched, and highway deck is suspended from its lower chords. Two single intersection Warren deck truss approach spans at each end of the main structure. A landmark, award winning bridge, known internationally for its design and setting.

Bourne (Sagamore Bridge) B-17-5 U.S. 6 over Cape Cod Canal

1935 Three span continuous truss. It is virtually identical to the Bourne Bridge, without the approach spans. The bridge won Honorable Mention in 1935 for its graceful design. Both bridges are elements in a much larger engineering project of significance in its own right, the Cape Cod Canal, a potential National Register Historic District.

Massachusetts Historical Commission, Judith B. McDonough, *Executive Director, State Historic Preservation Officer*
80 Boylston Street, Boston, Massachusetts 02116 (617) 727-8470

Office of the Secretary of State, Michael J. Connolly, *Secretary*

NFL.924

Chicopee/Holyoke C-13-12/H-21-30 Cabot Street (Rte. 116) over Conrail

1891 Six span steel Pennsylvania through truss. Oldest of the five known Pennsylvania through trusses and is one of the earliest known steel bridges in Massachusetts. Designed by Edward Shaw and built by the R.F. Hawkins iron works.

Dalton D-1-11 Holiday Road over Wahconah Brook

1894 One span Ball Queenpost pony truss. One of only two surviving examples of Charles Ball unique patented pipe truss bridge. Previously reviewed by the Massachusetts Historical Commission and determined eligible 10/6/81.

Erving/Montague E-10-3/M-28-0 Central Vermont Railroad over Millers River, Newton Street

1905 Five span pin-connected Pratt deck truss. Impressive example of a pin-connected long span deck truss which was favored by American railroads in the 19th century. Bridge is eligible individually and as a contributing element to a potential National Register District.

Framingham F-7-5 Main Street over Sudbury River

1878 Rare wrought iron bowstring arch pony truss. It is the only known surviving bowstring metal arch in the Massachusetts Department of Public Works database. It is one of six surviving metal truss bridges in the MDPW database built prior to 1880.

Holyoke/South Hadley H-21-1/S-18-4 State 116/Bridge Street over Connecticut River

1889 Ten spans wrought iron lattice through truss. A landmark bridge, which is the oldest metal lattice through truss in Massachusetts. It is the only known truss bridge to have ten spans. Bridge was determined to be eligible for the National Register 1/9/79.

Lancaster L-2-4 Bolton Road over Nashua River

1870 Pinned and bolted wrought iron and cast iron Post's type pony truss. Very early and unique metal truss bridge with national significance entered in the National Register of Historic Places 9/10/79.

Lancaster L-2-8 Ponakin Road over Nashua River

1871 Post truss. This bridge is the only known surviving Post truss in the United States. This nationally significant bridge is located near a potential historic district.

Lowell L-15-8 Hale Street over B & M Railroad

1892 One span pin-connected wrought iron Pennsylvania through truss. Early example of an uncommon bridge type in Massachusetts. Only one of the five Pennsylvania trusses to be pin-connected, virtually unaltered. This bridge is also located near the South Common National Register Historic District.