Massachusetts Cultural Resource Information System

Scanned Record Cover Page

Inventory No:	LOW.920
Historic Name:	Textile Avenue Bridge over Merrimack River
Common Name:	Moody Street Bridge - Univeristy Avenue Bridge
Address:	
City/Town:	Lowell
Village/Neighborhood:	Pawtucketville
Local No:	
Year Constructed:	
Architect(s):	Cheney, John E.
Architectural Style(s):	
Use(s):	Other Transportation
Significance:	Engineering; Transportation
Area(s):	LOW.CU: Eastern Pawtucketville
Designation(s):	

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

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Friday, March 07, 2014 at 3:44: AM

LOW.920

MASSACHUSETTS HISTORIC BRIDGE INVENTORY area cn

Municipality: Lowell District: 4

Street name/Rt. #: Textile Ave. (formerly Moody St.)
Over
Street name/Rt. #: Merrimack River, Northern Canal

Bridge key #: MUN 426 007 100 Photo ##s: 7: 4-9 126: 25-28

Bridge plan #: L-15-21

Common/historic name: Moody Street Bridge, Textile Avenue Bridge

Current owner:

UTM coordinates: AASHTO rating: 343 (6/10/87)

****

National Register status (insert date)

Entered: Potential:

Eligible: Non-eligible:

Field rating: (3) 2 1

****

Date built (source): 1896 (Lowell Annual Reports)

Date(s) rebuilt (source):

Builder (source): Groton Bridge & Manufacturing Co. (trusses), William H. Ward (substr.) (Lowell Ann. Rep.)

Designer (source): John E. Cheney (Lowell Ann. Reports)

****

Structural type/materials: 309

3 simple spans, 3 lines pinned steel Pratt deck trusses. 2 river spans are each 12 panels, the canal span is 9 panels. Die-forged eye-bar lower chords. Die-forged eye-bar diagonals; adjustable square rod counters in 4 central panels of river spans, in 3 central panels of canal span.

rock-faced granite ashlar cutwater piers; masonry in front wall of abutments is similar, but wing walls are random squared stone

Overall length: 495' Deck width/layout: 54.9' out-out

Skew: -

Main unit, # spans: 3 lengths: 2 @ 180', 1 @ 121'

Approaches, # spans: - lengths: -

Plaque: None seen location: -

Alterations, unusual features, comments:

originally had Eastern Mass Street Railway single-track line on deck

wood block deck replaced 1935 w/ kyanized timber deck w/ bituminous surface.

Flood repairs - 1937-38. Center span only one damaged. Lower chord eyebars replaced in 10 of the 12 panels in upstream truss, in 2 panels each in central and downstream trusses. Straighten/repair 6 diagonals/counters. Replace/renew 8 panels of lower laterals

Present Reliance open steel grid deck installed 1966. (assume guardrails installed same time)

Minor repairs/reinforcements visible in some parts of the trusses.

1896 photos of bridge (Lowell Annual Reports) show a very fancy wrought-iron guardrail, presumed replaced in 1966. (Guardrails were similar to those which still exist on the E. Merrimack St. bridge ((L-15-23)) which was also built by Groton Bridge & Mfg. Co, in 1895.

LOW.920

Visual quality (bridge and setting): High____ Average X Low____

Site integrity: Retained X Violated____

Describe: Bridge itself is visually impressive, though marred somewhat by added water lines and replaced bridge railings. Vast stretches of exposed ledge in the riverbed are picturesque, and the curving stone retaining wall of the Northern Canal is quite handsome. Modern highway and urban redevelopment projects, however, have altered the neighborhoods at both ends of the bridge.

History of bridge and site:

The present Textile Avenue Bridge, built in 1896, is the first bridge on this crossing of the Merrimack River, and was designed to carry an extension of Moody Street (a main artery through the heavily developed commercial/industrial heart of Lowell) across the Northern Canal and the Merrimack to the less developed Pawtuckeville neighborhood on the northern bank of the river. The Northern Canal, with its Great River Wall, was built in 1846-47 as a feeder canal to supplement the power supplied to Lowell's mills by the original Pawtucket Canal system. The bridge spans over the canal just west of the canal's original waste gates. The present wooden building on the Great River Wall directly over these gates (and known as the High Bridge Gate House) was erected in 1872 when the waste gates were converted from manual to mechanical operation.

Sources:
B.H. ✓
Plans 1937
RR (not found)

Lowell Annual Reports 1895-96
MVTM + HAER, The Lower Merrimack River Valley, An Inventory of Historic Engineering And Industrial Sites, pp. 67, 78-79.
Engineering Record, Nov. 23. 1895, p. 466

Old B.H. ✓

****

Summary statement of significance:

The oldest of 5 known Pratt deck truss bridges in the MDPW data base, and contains 2 of the longest 19th century metal truss spans in the data base. Few major structural alterations, although the replacement of the original guardrails and the addition of large utility/water lines has lessened the bridge's visual impact.

Designed by a prominent Boston structural engineer, John E. Cheney. A Lowell native, Cheney had become assistant engineer for the City of Boston in 1874, and was assistant city engineer in charge of bridges from 1885 until his death in 1906. He also maintained an extensive outside consulting practise, designing numerous bridges for a variety of railroads and municipalities.

The bridge spans over the 1847 Northern Canal, which is one of the major elements in the Lowell Locks and Canals National Register Historic District.

Statement prepared by: S.J. Roper Date: 18 August 1989

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Field survey by: S.J. Roper, MDPW Historic Bridge Specialist Date: 31 July 1989

9-12-89

LOW.920

MDPW RECOMMENDATION - NATIONAL REGISTER ELIGIBILITY

	Municipality	Street on	No.
Bridge:	Lowell	Textile Avenue/Merrimack River	L-15-21

Historic evaluation

Significant because:

1) Unusual or unique type Pratt deck truss ✓
   or rare survivor of common type
2) Early example of type ✓
3) Design - Valuable contribution to bridge technology
4) Retains integrity (largely) ✓
5) ~~Builder~~ Designer known and important John E. Cheney ✓
6) Bridge historically important to area ✓

Not significant because:

1) Common type
2) Post-1931
3) Design - no (known) contribution to bridge technology ✓
4) Integrity lost because of: a) alterations
   b) disintegration
5) Builder unimportant or not known
6) No known significance in area

- [X] Potentially eligible
- [ ] Not eligible
- [ ] Not eligible individually, but located
- [ ] Conditionally not eligible; review when 50 years old

Comments:

Oldest example of an uncommon (among surviving Massachusetts highway bridges) structural type. Slightly altered, but not denatured. Spans over one element (the Northern Canal and Great River Wall) of the Locks and Canals N.R. Historic District.

18 August 1989

J. J. Roper, MDPW Historic Bridge Specialist

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Geodetic Survey
4. Revised 1966
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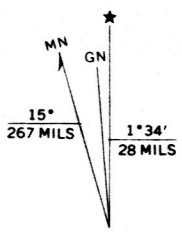
Map edited 1979



UTM GRID AND 1979 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:25 000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM 1929

LOW.920

L-15-21

LOWELL QUAD.

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

LOW.920

EXISTING SURVEYS: NHL PRE 19th C; 1800 1809; 1810 1819; 1820 1829; 1830 1839; 1840 1849; 1850 1859; 1860 1869; 1870 1879; 1880 1889; 1890 1899; 1900 1909; 1910 1919; 1920 1929; 1930 PRESENT | NR | HAER | HABS | STATE | COUNTY | LOCAL | OTHER
DATA: DOD | FN | HIST | TECH | ARCH | TAPES
DWGS: HAER | OTHER
PHOTOGRAPHS: FIELD | SLIDES | HIST | SURVEY | STEREO | MOVIES | LC
STATES: AL AK AZ AR CA CO CT DE FL GA HI ID IL IN IA KS KY LA ME MD MA MI MN MS MO MT NE NV NH NJ NM NY NC ND OH OK OR PA RI SC SD TN TX UT VT VA WA WV WI WY
SUB-CLASSIFICATION: 0 1 2 3 4 5 6 7 8 9
SPECIALIZED STRUCTURES (SPEC STRUC): 93 92 91 SURVE 90 MUSEUM 89 ADAPT 88 HOUS 87 P&ET 86 MATS 85 MATH 84 HEAT 83 CONST 82 HYDR 81 TUNLS 80 DAM 79
BUILDING TECHNOLOGY (BLD TECH): 78 77 76 ANCIL 75 MECH 74 FENES 73 ROOF 72 FLOOR 71 FRAME 70 FOUND 69
DATES OF CONSTRUCTION: 1930 PRESENT | 1920 1929 | 1910 1919 | 1900 1909 | 1890 1899 | 1880 1889 | 1870 1879 | 1860 1869 | 1850 1859 | 1840 1849 | 1830 1839 | 1820 1829 | 1810 1819 | 1800 1809 | PRE 19th C
EXTRACTIVE INDUSTRIES (EXTRAC): 02 IRON | 02 COAL | 02 OIL | 02 MNRL | 02 NON-FERROUS | 02 | 02 | 02 | 02 | 02
BULK PRODUCT INDUSTRIES (BULK): 10 AGRI | 11 BPGC | 12 CHEM | 13 FOOD | 14 METAL | 15 TEXT | 16 WOOD | 17 | 18 | 19 | 20

HAER INVENTORY

1. NAME OF STRUCTURE: Moody Street Bridge
2. DATE: 1896
3. NATURE OF STRUCTURE: Highway Bridge
4. INDUSTRIAL CLASSIFICATION: 602
5. LOCATION: STREET & NUMBER: Textile Avenue at Merrimack River
CITY OR TOWN: Lowell
COUNTY: Middlesex c
STATE: MA
6. USGS QUAD MAP & UTM GRID REF.: Lowell 19.309440. 472456
7. OWNER OF PROPERTY: City of Lowell
ADDRESS:
8. CONDITION: [X] EXCELLENT [ ] GOOD [ ] FAIR [ ] DETERIORATED [ ] RUINS [ ] UNEXPOSED [ ] ALTERED [X] ACCESSIBLE TO PUBLIC

9. DESCRIPTION & BACKGROUND HISTORY: NUMBER OF STRUCTURES; DIMENSIONS; FABRIC; STRUCTURE & FORM; SURVIVING MACHINERY, FITTINGS AND EQUIPMENT; APPROX. AREA OF SITE; ALTERATIONS; PRESENT USE; ENGINEER/ ARCHITECT/DESIGNER; IMPORTANT EVENTS & INDIVIDUALS.

The Moody Street Bridge was constructed in 1896 by the Groton Bridge and Manufacturing Company. It's designer is unknown. It is a pin connected, lattice girder, deck highway bridge with three Pratt truss spans, for a total length of 750 feet. The central and northern spans are each 300 feet long, and consist of a triple system of Pratt trusses. Each of these spans is 20 feet deep. The southern span is 150 feet long and is only 12 feet deep. The bridge rests upon two pier abutments, a single cutwater masonry pier, and the Northern Canal retaining wall. The bridge received a new deck during the 1950s.

10. PHOTOGRAPHS & SKETCH MAP ON REVERSE SIDE.

11. RELATED SOURCES OF INFORMATION: HISTORICAL REFERENCES (PUBLISHED ARTICLES, MANUSCRIPTS, REPORTS, DRAWINGS, PHOTO GRAPHIC RECORDS)
CONTACTS: (NAMES & ADDRESSES OF ANYONE WITH EYE-WITNESS ACCOUNTS OR RELEVANT INFORMATION); TAPE RECORDINGS.

Engineering and Building Record, Vol. XXXII, No. 26, Nov. 23, 1895, p. 466.
Lowell City Engineer's Office

12. DANGER OF DEMOLITION OR DAMAGE [ ] YES [X] NO
NATURE OF THREAT:
13. PRIORITY: 3

14. EXISTING SURVEYS AND DATES: [ ] NHL [ ] NR [ ] HAER [ ] HABS [ ] STATE [ ] COUNTY [ ] LOCAL [ ] OTHER

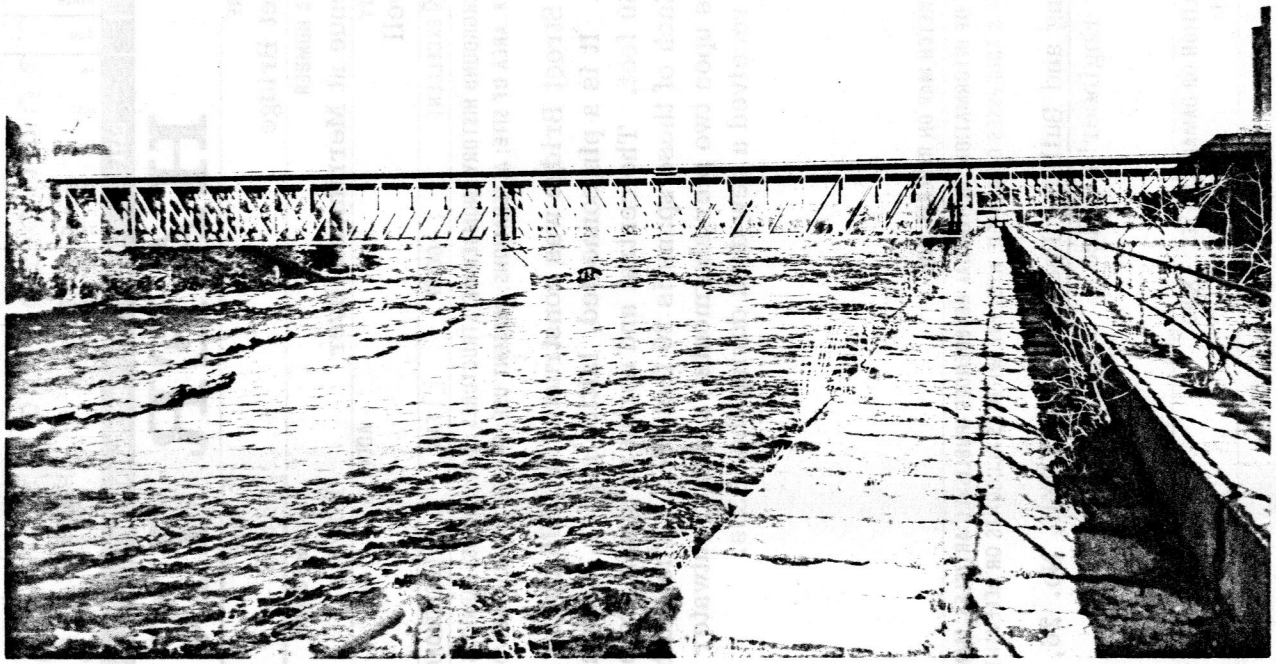
15. INVENTORIED BY: YOUR NAME: Peter M. Molloy
ADDRESS: 800 Mass. Ave., N. Andover, MA 01845
AFFILIATION: Merrimack Valley Textile Museum
DATE: 4/76

PLEASE RETURN TO THE HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, WASHINGTON, DC 20240

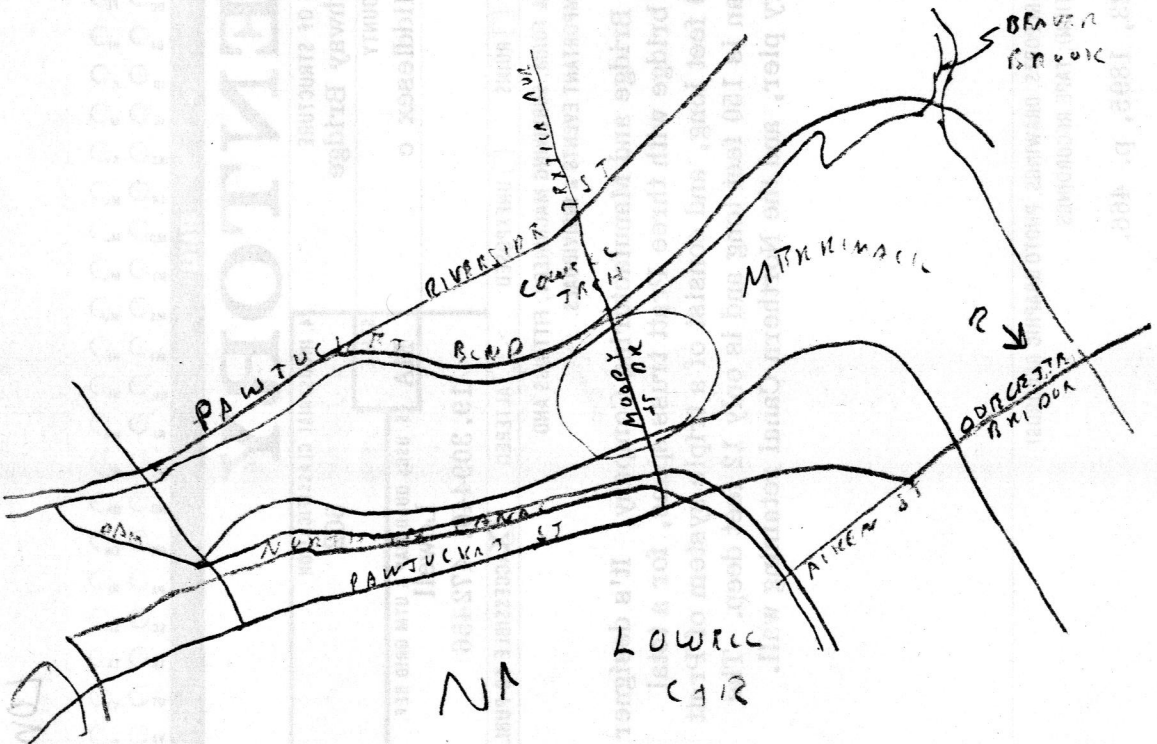
MANUFACTURING INDUSTRIES (MFG): MACH | FABR | TEQUIP | INST | GMFG
UTILITIES (UTIL): WATER | SANI | GAS | ELEC
POWER SOURCES & PRIME MOVERS (PS & PM): MUSL | WATER WHEEL | WATER TURB | WIND | STEAM RECIP | STEAM TURB | INT COMB | DIESEL | ELEC
TRANSPORTATION (TRANS): RR | ROAD | CANAL | MARINE | AIR | PIPE
COMM: T&T | R&TV
BRIDGES: BEAM | ARCH | TRUSS | SUSP | AQUE | TRES | CANT | MOVE

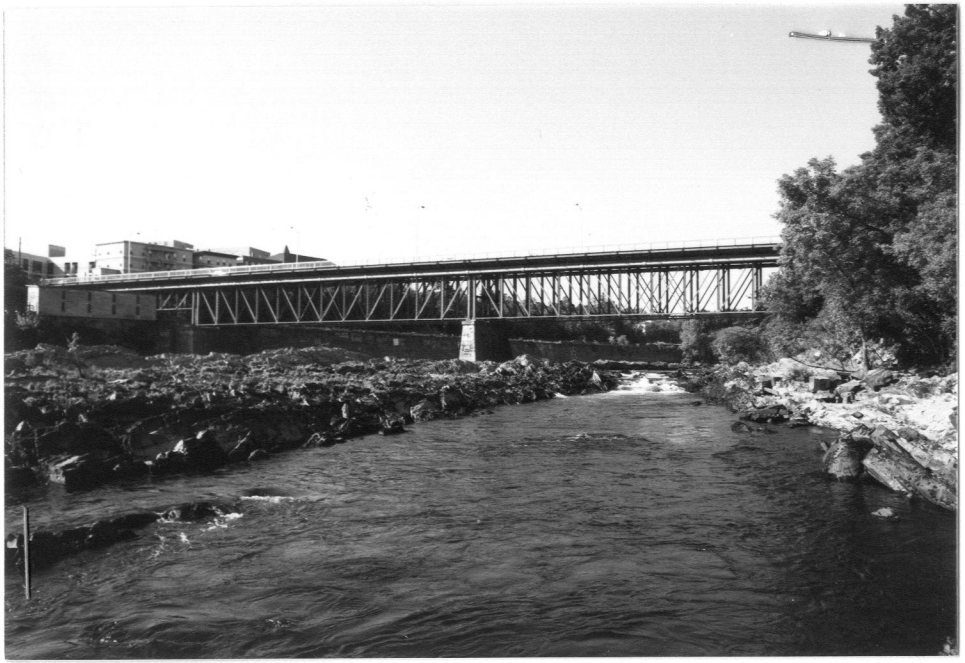
P30618X

LOW.920

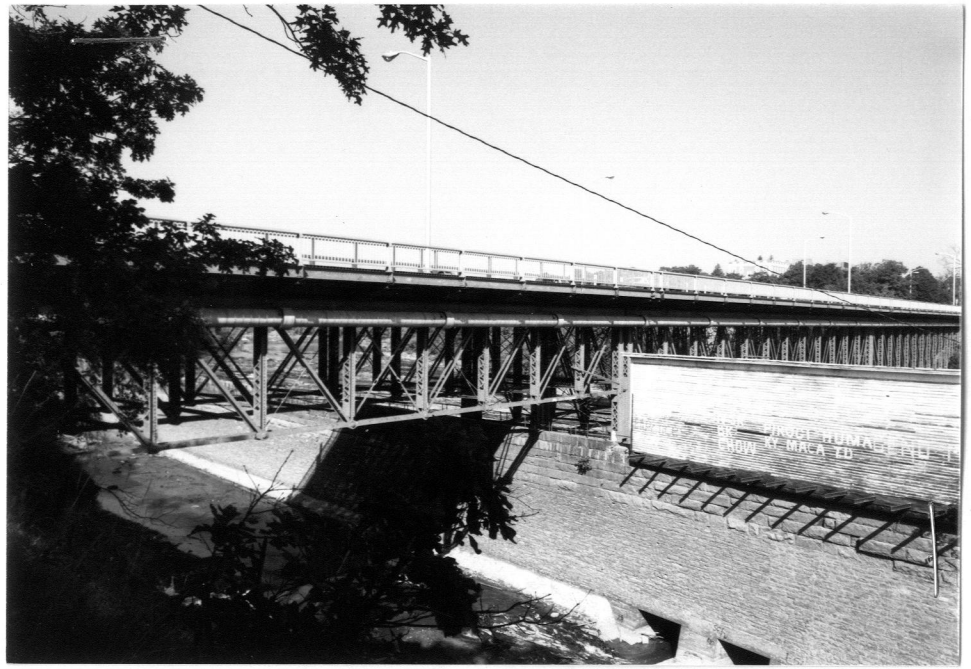


WESTERN SIDE OF BRIDGE

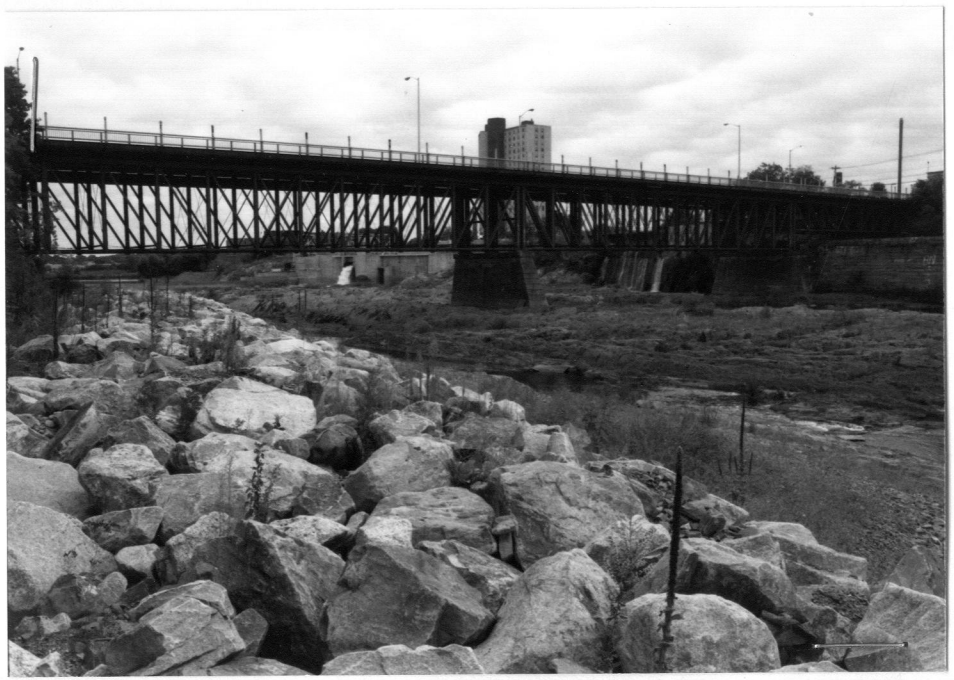




FROM NE 7-31-84



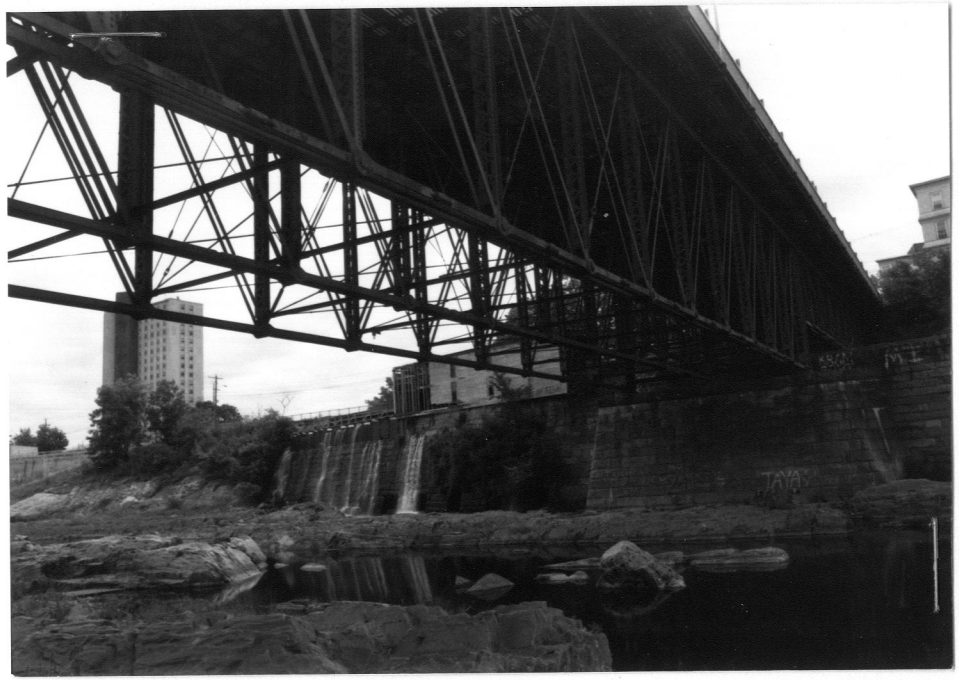
FROM SE 7-31-84



FROM W 9-12-89

NORTHERN SPAN, FROM S 9-12-89

FROM NW ABUTMENT 7-31-84



CENTRAL SPAN FROM W 9-12-89

NORTHERN END OF CENTRAL SPAN, FROM SW 9-12-89

FROM NW 7-31-84

FROM SE 7-31-84

LOW.920

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

FROM: WM. SMITH

DATE: 12/10/90

TOWN: Lowell

PROPERTY: L-15-21 Textile Ave over Merrimack 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?

1896 3 span pinned steel Pratt deck thru.
oldest example of an uncommon highway
bridge type

☐ DOE LETTER WRITTEN

_____ (DATE)

FILED IN ER FILE _____

Concur 2/6/91
D MacLeod

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.

LOW.920

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.

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

Boston/Quincy	B-16-368/Q-1-50	Long Island Bridge over Quincy Bay	LOW.920
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

LOW.920

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*

LOW.920

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.