

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

**National Register of Historic Places
Inventory—Nomination Form**

For NPS use only

received AUG 21 1984
date entered SEP 20 1984

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

1. Name

historic THE CANTON VIADUCT

and/or common The Canton Viaduct

2. Location

street & number NEPONSET AND WALPOLE STREETS N/A not for publication

city, town CANTON N/A vicinity of

state MASSACHUSETTS code 025 county NORFOLK code 021

3. Classification

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

4. Owner of Property

name Massachusetts Bay Transportation Authority

street & number 10 Park Plaza

city, town Boston N/A vicinity of state MA 02116

5. Location of Legal Description

courthouse, registry of deeds, etc. Norfolk County Registry of Deeds

street & number High Street

city, town Dedham state MA

6. Representation in Existing Surveys

title Historic American Engineering Record has this property been determined eligible? yes no

date Inventory (1973); Photos (1977; 1982) federal state county local

depository for survey records HABS/HAER, National Park Service

city, town Washington, D.C. 20240 state

7. Description

CANTON VIADUCT, NEPONSET AND WALPOLE STREETS, CANTON

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

Describe the present and original (if known) physical appearance

The Canton Viaduct is a multiple-arch granite viaduct 615 feet in length, 22 feet wide, and approximately 70 feet above the surface of the East Branch of the Neponset River. The viaduct was the principal structure on the Boston & Providence Railroad's main line, and the last to be completed, opening July 28, 1835. At the time, noted Hayward's Gazetteer of 1847, the structure was "widely conceded the most elegant and massive structure of masonry in the United States."¹

In an unusual departure from contemporary construction practice, the structure is not solid, composed instead of two parallel walls, 4 feet apart and each 5 feet thick, extending the entire length of the viaduct. At intervals of 27-1/2 feet, the walls are connected with buttresses 5-1/2 feet thick, extending transversely across the walls and projecting 4 feet beyond their faces.² A series of segmental arches link the buttresses at the top of the viaduct, supporting the cantilevered roadbed. At the base of the viaduct, six rounded arches 8 feet 4 inches in span allow the East Branch to pass beneath, while Neponset Street passes through a larger 22-1/2-foot arch. Foundations of the structure extend to a depth of eight feet below the ground level. The entire viaduct is built on a 1-degree curve.

In 1860 a second track was laid on the narrow structure. To accomplish this, the original parapet walls were removed and a skeleton platform constructed of transverse double-cantilever wooden beams on top of the masonry and under the track rails.³ This placed the outer rail of each track directly over the arches. Although the wooden beams were replaced by those of iron in 1880, the increasing weight of trains directly on the arches finally caused a failure of several arches in 1909. In 1910, the railroad, by then the New York, New Haven, and Hartford Railroad, reinforced the exterior arches with concrete.⁴ The final alteration to the structure occurred in 1952, when a second arched opening, lined with reinforced concrete, was cut through the viaduct for Neponset Street traffic.

¹ John Hayward, A Gazetteer of Massachusetts (Boston: John Hayward, 1847), p. 121.

² Edward D. Galvin, "The Canton Viaduct," Railroad History Bulletin 129 (Autumn 1973), pp. 71-85.

³ Robert Rogers, "The Canton Viaduct" (unpublished, Canton Historical Society), in Galvin, "The Canton Viaduct," pp. 81-82.

⁴ "Improving a Granite Viaduct," Engineering Record 66 (10 September 1910), p. 296-297.

8. Significance CANTON VIADUCT, NEPONSET AND WALPOLE STREETS, CANTON

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

Specific dates 1834

Builder/Architect William Gibbs McNeill, Dodd and Baldwin

Statement of Significance (in one paragraph)

The Canton Viaduct possesses integrity of location, design, setting, materials, and workmanship. The viaduct is significant as an engineering structure as well as for its association with the development of the Boston & Providence Railroad. The engineers responsible for its construction, William Gibbs McNeill and George Washington Whistler, were then among the nation's preeminent railroad engineers. Together with the Baltimore & Ohio's Carrollton and Thomas viaducts (constructed in 1829 and 1835 respectively), the structure is one of the oldest surviving multiple-arch stone railroad bridges in the United States. The structure thus meets criteria A, B, C, and D of the National Register of Historic Places.

The East Branch of the Neponset provided one of the most important collection of mill privileges in this part of the county, and from 1700 on, the nearby village of South Canton was the industrial center of town and the surrounding area. In addition to the ordinary saw and grist mills, a gunpowder mill operated here prior to and during the Revolution; Leonard & Kinsley produced some of the first steel implements in the country; and in 1800, less than 100 yards above the future site of the viaduct, Paul Revere constructed one of the first copper rolling mills. The same distance downstream is the site of the earliest cotton spinning mill in Massachusetts, established by James Beaumont in 1803. Later manufacturers would include large factories for the production of silk and stove polish. The coming of the railroad was an important factor in the industrial growth of South Canton.

The Boston & Providence Railroad was incorporated in 1831. In laying out the railroad, nine different routes between Boston and Providence were considered. South Canton's prominence as a manufacturing village undoubtedly played a significant part in the choice of the "Eastern Route" over the eight other surveyed lines. Canton residents figured prominently among the new railroad company's stockholders, and among its directors was Joseph Warren Revere (1777–1868), son of the Revolutionary hero and inheritor of the copper works.

Construction of the railroad was begun in 1832. Early in 1834, work crews reached Canton, where the vale of the Neponset River's East Branch was the last and largest of the obstacles to be overcome. Here, the original decision to use inclined planes like that on the Granite Railway at Quincy was abandoned after a runaway car on the incline killed several visitors.

Engineer for the structure was the Boston & Providence Railroad's chief engineer, William Gibbs McNeill (1801–1853), assisted by William Raymond Lee and George Washington Whistler (1800–1849). Both McNeill and Whistler had served on the Baltimore & Ohio Railroad's Board of Engineers 1827–1830, and were certainly familiar with the 100-foot masonry arch Carrollton Viaduct (1829), the first masonry railroad bridge in the U.S. Even as the Canton Viaduct was being constructed, the B & O built the Thomas Viaduct under the

9. Major Bibliographical References

see continuation sheet

10. Geographical Data

Acreeage of nominated property 124,230 sq. ft. (2 acres)

Quadrangle name Norwood, MA

Quadrangle scale 1:25,000

UTM References

A

1	9	3	2	1	9	8	0	4	6	6	9	3	4	0
Zone		Easting				Northing								

B

Zone		Easting				Northing								

C

Zone		Easting				Northing								

D

Zone		Easting				Northing								

E

Zone		Easting				Northing								

F

Zone		Easting				Northing								

G

Zone		Easting				Northing								

H

Zone		Easting				Northing								

Verbal boundary description and justification See assessors map attached, for legal boundaries

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

state NONE code county code

state code county code

11. Form Prepared By

name/title Peter Stott with George T. Comeau and the Canton Historical Commission

organization Massachusetts Historical Commission date April, 1984

street & number 294 Washington St. telephone (617) 727-8470

city or town Boston, state MA 02108

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national state local

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

State Historic Preservation Officer signature Patricia H. Wesbucki

State Historic Preservation Officer title Massachusetts Historical Commission date 7/23/84

For NPS use only

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

Entered in the National Register date 9-20-84

Keeper of the National Register

Attest: date

Chief of Registration

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

**National Register of Historic Places
Inventory—Nomination Form**

For NPS use only

received

date entered

Continuation sheet CANTON VIADUCT,
CANTON, MA

Item number 8

Page 1

direction of Benjamin Latrobe. Unlike the Carrollton Viaduct, both the Thomas and Canton viaducts are multi-arch stone structures each built on a curve, completed within a few weeks of each other, and almost exactly the same length. Both McNeill and Whistler would later go on to build other important railroads in Massachusetts and elsewhere. McNeill became chief engineer of the Boston & Worcester, while Whistler became consulting engineer for its counterpart, the Western Railroad, and was responsible for locating the line through the Berkshires.⁵

The contractor responsible for building the Canton Viaduct was the partnership of Dodd & Baldwin. Stone for the viaduct was quarried locally: its interior rubble stone came from a Canton source known as the Dunbar Quarry; granite for exposed surfaces was extracted from a quarry in the adjoining town of Sharon, and hauled to the viaduct site on flatcars over the completed portion of the track. (It is reported that the draft horse -- "Charlie" -- that hauled the empty cars back to Sharon was also the first to cross the completed viaduct when disagreement broke out among the structure's builders as to who should have the honor.) Although Irish laborers were engaged for rough stone laying and the construction of the gravel roadbed, the stone cutters and masons who cut and laid the finished stone were Scottish Freemasons, and many of the viaduct's surface stones bear the identifying symbols of the men who shaped them. In recent years, many of these marks have been outlined with paint.

The railroad was opened from Boston as far as Canton by September 12, 1834. In the meantime, construction had begun from the Providence end, and by early June 1835, all but the viaduct had been completed. During June and July 1835, the line was operated with a jitney bus carrying passengers around the still unfinished viaduct.

In 1835, the viaduct was one of the most visible pieces of evidence of man's power to conquer nature. One traveler wrote of the "stupendous work," testifying to "man's dominion over nature, and his ability to overcome any obstacle to any undertaking that is not morally or physically absurd."⁶

The Boston & Providence Railroad was one of three passenger railroads to be completed in Massachusetts in 1835, along with lines from Boston to Worcester and to Lowell. Until 1888 the Boston & Providence maintained an independent existence. At that time it was leased to the Old Colony Railroad, which in turn was absorbed by the New York, New Haven, & Hartford in 1893. Today, as the most direct route between Boston and Providence, the line remains in heavy use, carrying both MBTA commuter trains and AMTRAK's Northeast Corridor Service between Washington, D.C. and Boston.

⁵ Carl W. Condit, American Building Art: The Nineteenth Century (New York: Oxford University Press, 1960), pp. 241-242; A Biographical Dictionary of American Civil Engineers (New York: American Society of Civil Engineers, 1972), pp. 86, 126.

⁶ Quoted in Harlow, p.111.

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

Canton Viaduct
Norfolk County
MASSACHUSETTS

Working No. AUG 21 1984
Fed. Reg. Date: 2/5/85
Date Due: 9/20/84 - 10/5/84
Action: ACCEPT 9-20-84
 RETURN
 REJECT
Federal Agency: _____

Entered in the
National Register

- resubmission
- nomination by person or local government
- owner objection
- appeal

Substantive Review: sample request appeal NR decision

Reviewer's comments:

Recom./Criteria _____
Reviewer _____
Discipline _____
Date _____
_____ see continuation sheet

Nomination returned for: _____ technical corrections cited below
_____ substantive reasons discussed below

1. Name

2. Location

3. Classification

Category	Ownership Public Acquisition	Status Accessible	Present Use

4. Owner of Property

5. Location of Legal Description

6. Representation in Existing Surveys

Has this property been determined eligible? yes no

7. Description

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

Describe the present and original (if known) physical appearance

- summary paragraph
- completeness
- clarity
- alterations/integrity
- dates
- boundary selection

8. Significance

Period _____ Areas of Significance—Check and justify below

Specific dates _____ Builder/Architect _____

Statement of Significance (*in one paragraph*)

- summary paragraph
- completeness
- clarity
- applicable criteria
- justification of areas checked
- relating significance to the resource
- context
- relationship of integrity to significance
- justification of exception
- other

9. Major Bibliographical References

10. Geographical Data

Acreeage of nominated property _____

Quadrangle name _____

UTM References _____

Verbal boundary description and justification _____

11. Form Prepared By

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

_____ national _____ state _____ local

State Historic Preservation Officer signature

title _____

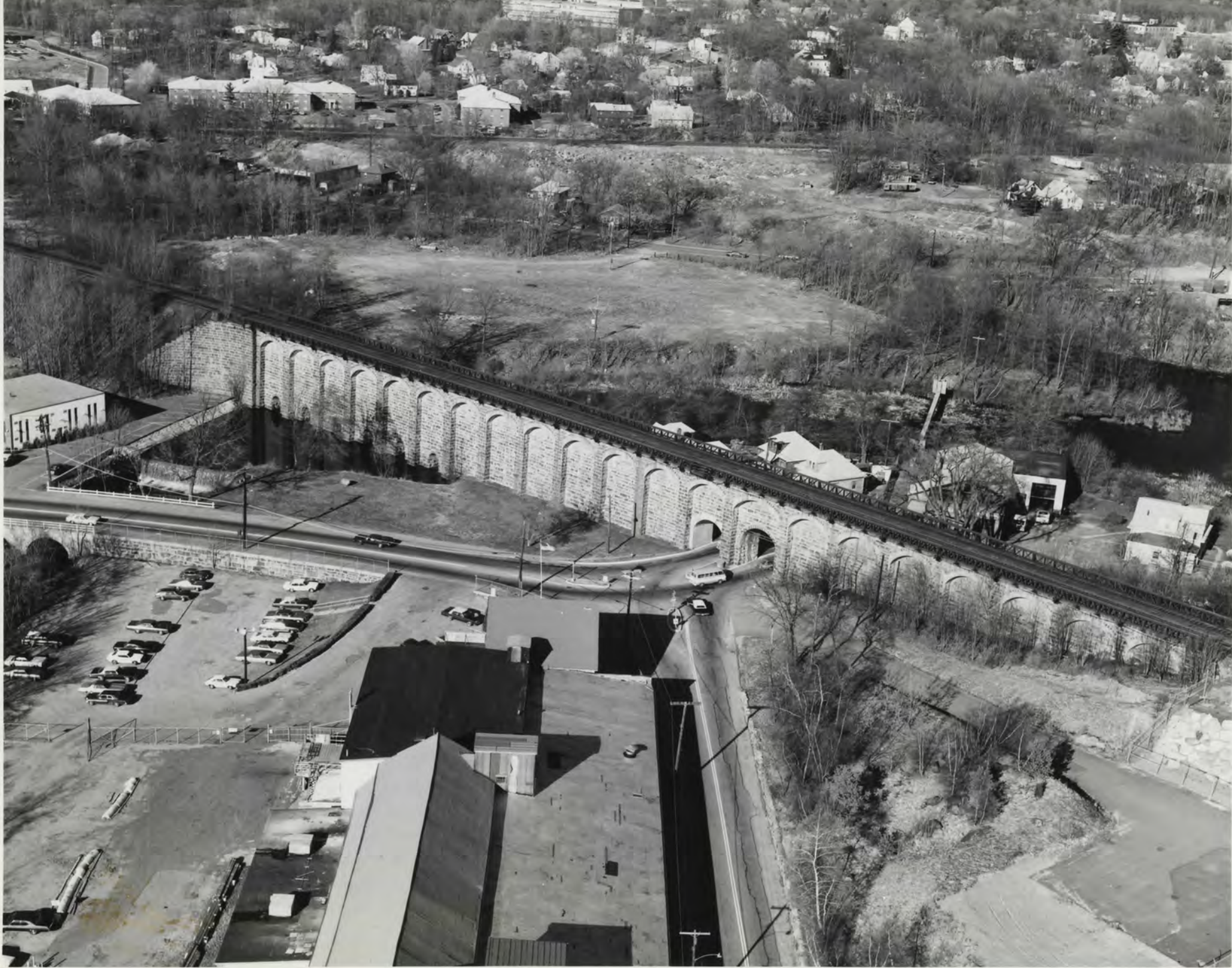
date _____

13. Other

- Maps
- Photographs
- Other

Questions concerning this nomination may be directed to _____

Signed _____ Date _____ Phone: _____

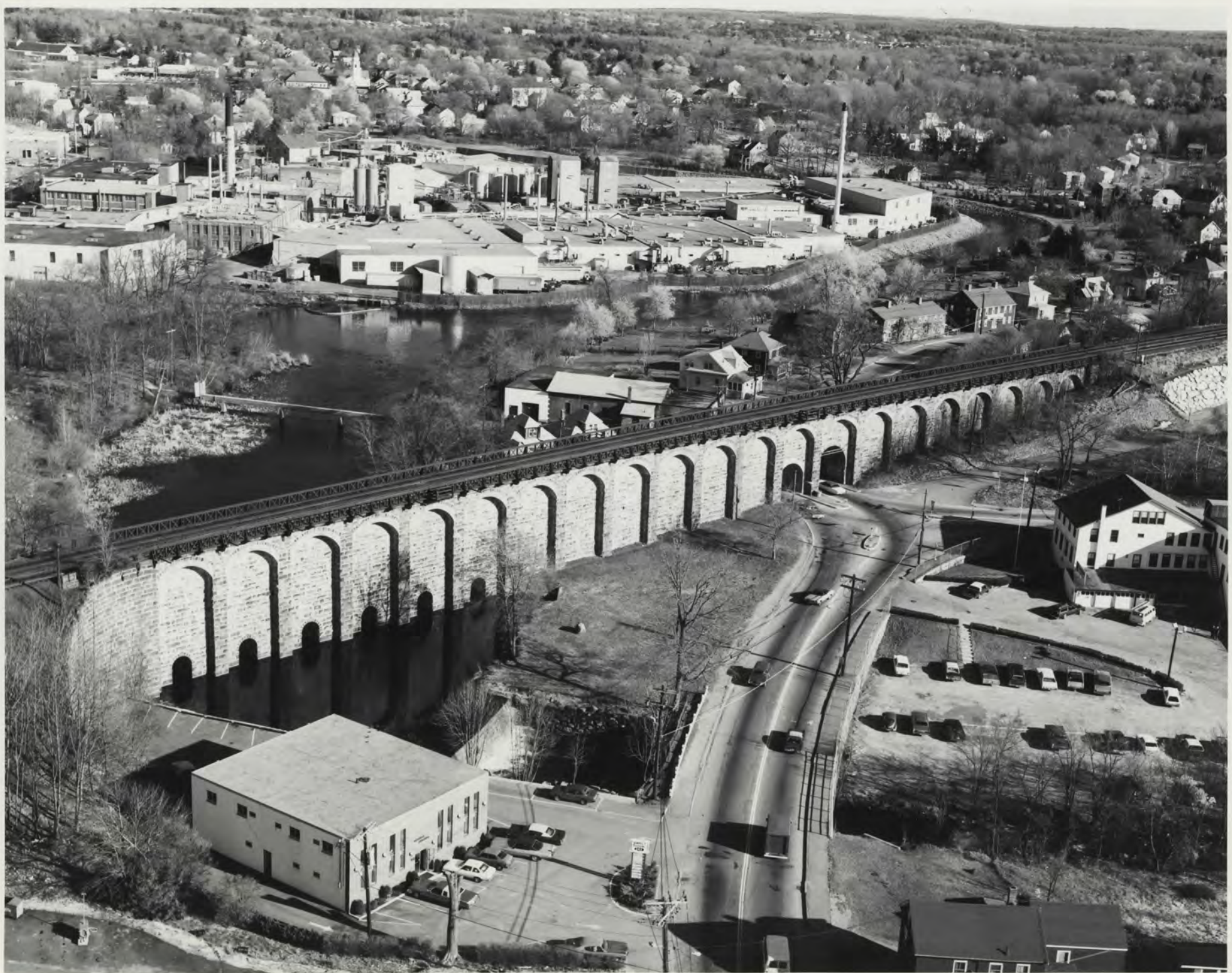


Canton Viaduct
Canton, Massachusetts

Photo #1 of 2

HISTORIC AMERICAN ENGINEERING RECORD
(Library of Congress Negative)

Jack C. Bouchey Photographer
Date *April*, 19*77*



Canton Viaduct
Canton, Massachusetts

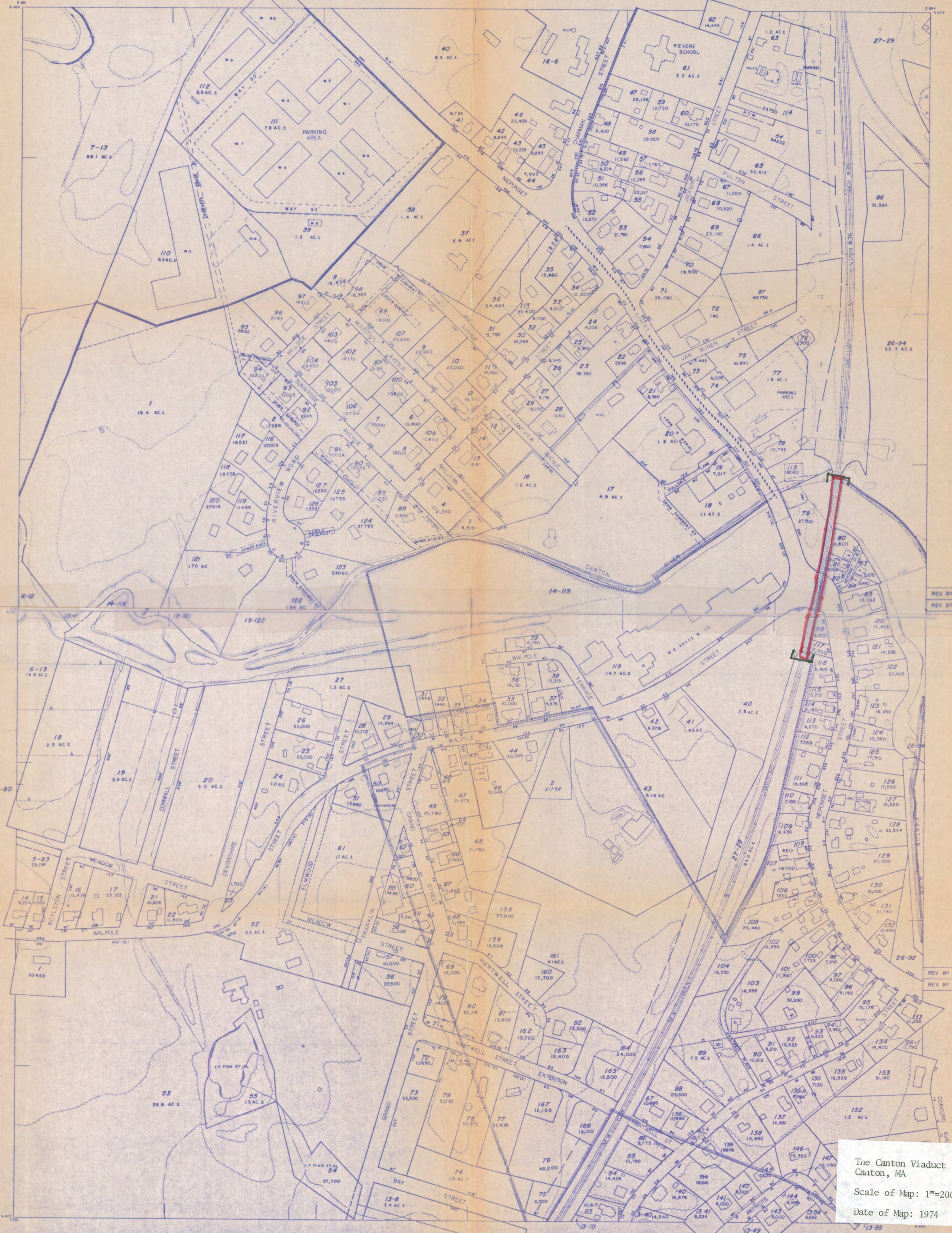
Photo #2 of 2

HISTORIC AMERICAN ENGINEERING RECORD
(Library of Congress Negative)

..... *Jack C. Bryner* Photographer
Date *April* 19.. *77*

TOWN OF CANTON, MASSACHUSETTS

PLANIMETRIC SURVEY



REV BY	AVIS	1974
REV BY	AVIS	1971

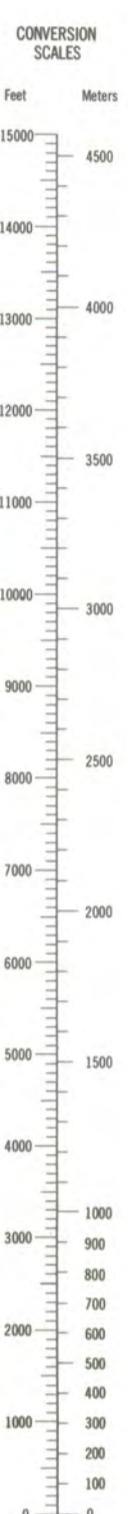
REV BY	AVIS	1976
REV BY	AVIS	1977

LAST NUMBER USED - 11

The Canton Viaduct
 Canton, MA
 Scale of Map: 1"=200'
 Date of Map: 1974



6	15	27
5	14	26
4	13	25



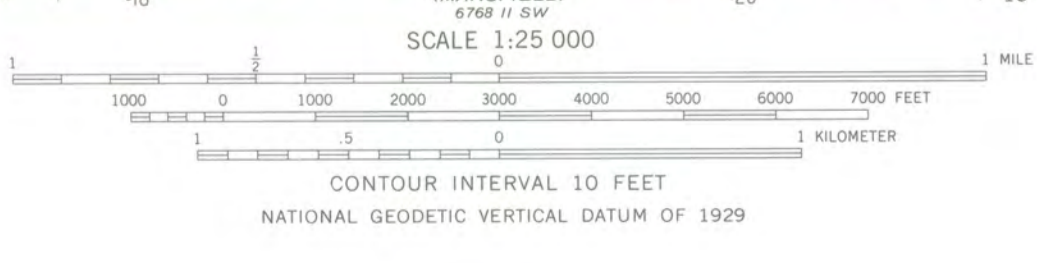
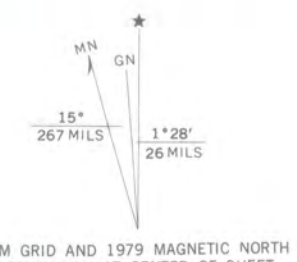
Feet	Meters
1	3048
2	6096
3	9144
4	12192
5	15240
6	18288
7	21288
8	24288
9	27288
10	30288

To convert feet to meters multiply by 3048
To convert meters to feet multiply by 0.3048

The Canton Viaduct
Canton, Ma.

UTM:
19/321980/4669340

Mapped, edited, and published by the Geological Survey
Control by USGS, USC&GS, Massachusetts Harbor and Land
Commission, and Massachusetts Geodetic Survey
Topography by planetable surveys 1936. Revised from
aerial photographs taken 1969. Field checked 1970
Polyconic projection. 1927 North American datum
10,000-foot grid based on Massachusetts coordinate system,
mainland zone
1000-meter Universal Transverse Mercator grid,
zone 19
Red tint indicates areas in which only landmark buildings are shown
There may be private inholdings within the boundaries of
the National or State reservations shown on this map
Revisions shown in purple compiled in cooperation with State of
Massachusetts agencies from aerial photographs taken 1977 and other
source data. This information not field checked. Map edited 1979



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



ROAD CLASSIFICATION

Primary highway, hard surface	Light-duty road, hard or improved surface
Secondary highway, hard surface	Unimproved road
Interstate Route	U.S. Route
	State Route

NORWOOD, MASS.
N4207.5—W7107.5/7.5
1970
PHOTOREVISED 1979
AMS 6788 II NW—SERIES V814

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

5-1-84 CJ
6 Legion St
Canton, MA 01921
RECEIVED

1984

Dear Commission:

MASS. HIST. COMM.

I definitely believe
the Canton Viaduct should be
nominated to the National
Register.

It is a beautiful structure
and a necessary one. Also
the struggle and hard work
of the laborers who built it
should not be forgotten. They
did not have any modern
conveniences in those days.
And the genius who dreamt of
building it should be remembered.

I love it.

Jennie Duguay