

-1848-

The Opening of the Railroads
and the
Creation of White River Junction

Northern New England Chapter
Society for Industrial Archeology
Spring Tour

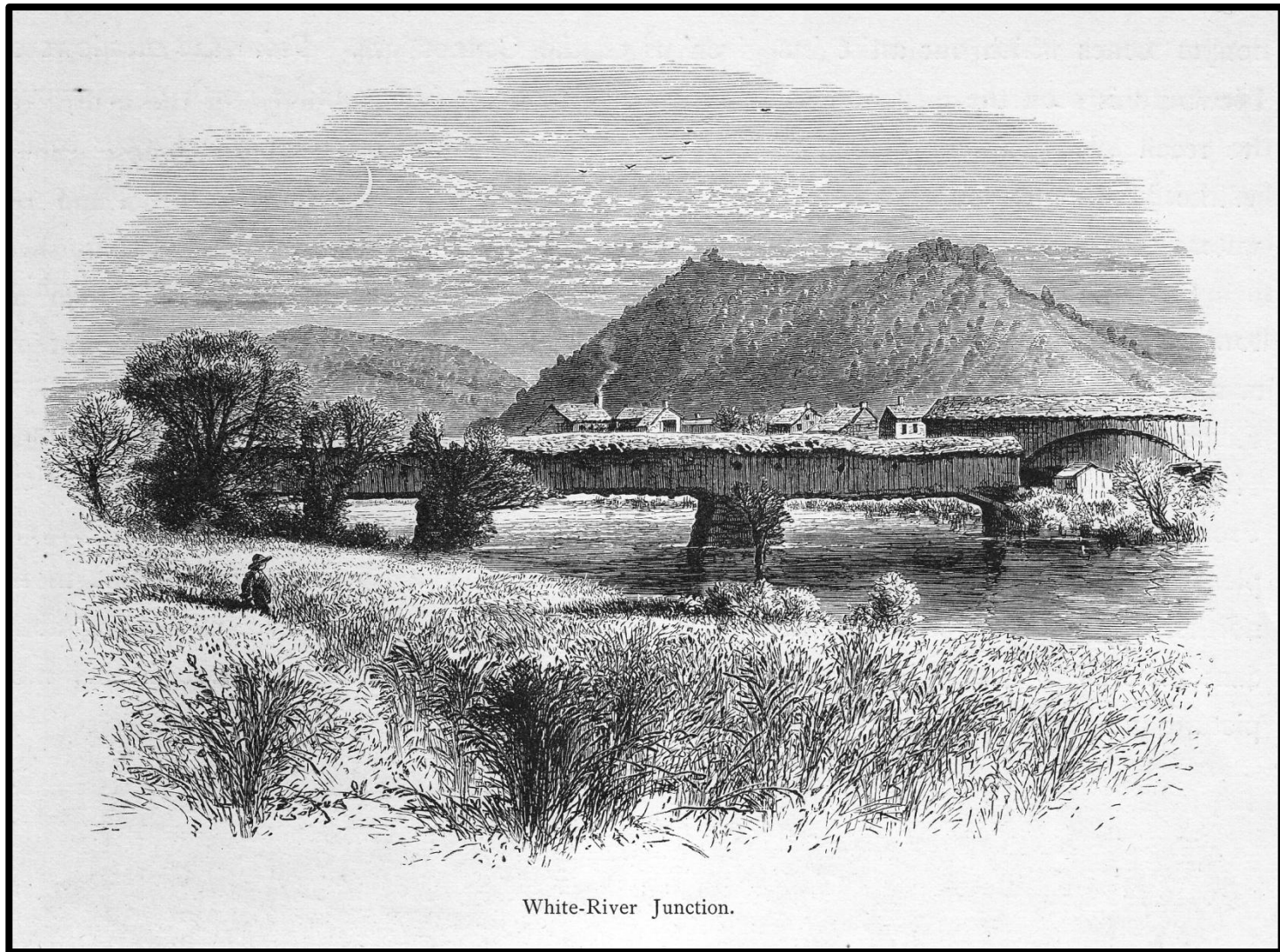
June 20, 2015
Frank J. Barrett, Jr.

The Program

- I. The Question, the Problem, and the Solution.***
- II. Chartering, Financing, and Constructing the Early Railroads into White River Junction.***
- III. Creating White River Junction.***
- IV. Early Steam Power into White River Junction.***
- V. 1848: A Transportation Revolution.***
- VI. A Final Question to Ponder.***

Part I

***The Question, the Problem,
and the Solution.***



White-River Junction.

The Question:

***What Brought the Confluence of Railroads to the
Upper Connecticut River Valley in 1848?***



The Answer:

The Erie Canal thru the Mohawk Valley of New York

Opened in October 1825.

Connected New York City with the Great Lakes and Canada.

The Erie Canal **Was a Political Success**

Cost to the State of New York:

\$7,143,789.66

Period of Construction:

July 4, 1817 to October 26, 1825

(8 years, 3 months)

For the first time in this country that a government was engaged in the funding of a large scale internal improvement project.

The Erie Canal **Was an Engineering Success**

363 Miles Long

83 Locks

18 Aqueducts

Approximately 300 Bridges

**Greatly advanced the knowledge of civil
engineering and construction practices.**

The Erie Canal **Was an Economic Success**

Cross State Travel Time:
4 to 6 Weeks Dropped to 6 Days

Freight Transportation Costs:
\$95 to \$125 ton Dropped to \$4 to \$6 ton

**Established great economic growth along the
length of the canal and at New York City.**



The Geographical Problem:
Mislocated Colonial Ports

From the American Traveler of Boston in 1825

“Is Old Massachusetts in her palsied Dotage? Is her sun of prosperity ... setting, to rise no more? This sun with increasing splendor is irradiating the hills of the Hudson and fertile vales of New York. Where are the thousand ships of the Bay State, her accumulated wealth of two centuries? Has the building of a few roads and the cutting of one canal, or rather, ditch of inconsiderable distance satisfied her ambitions and put her ‘at ease in her possessions’?” signed “Shadrack”

-By 1830-

New England

Was Loosing population and economically stagnating.

Upper New York State & New York City

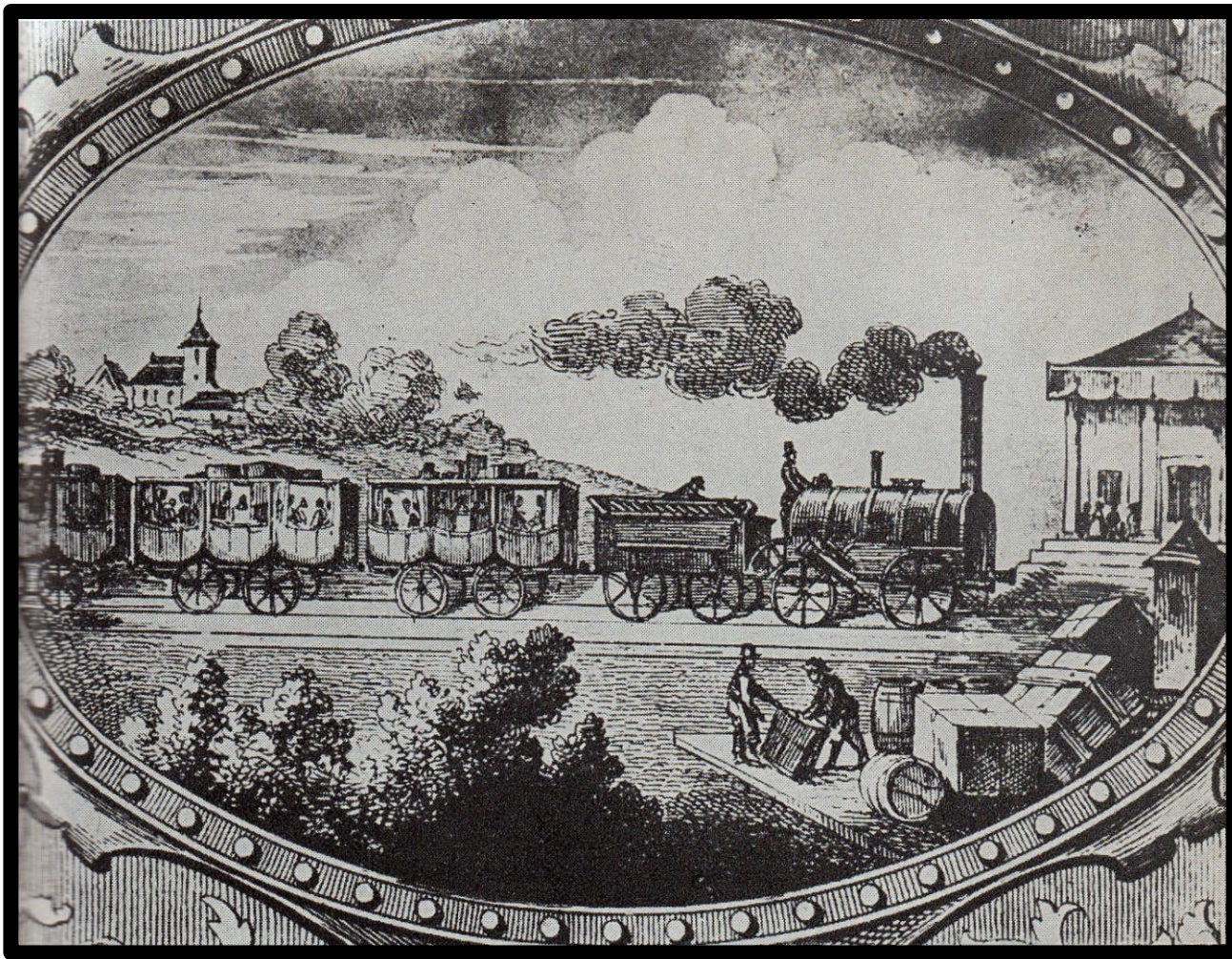
Were gaining population and economically booming.

The Solution:

The recent British invention called the steam powered railroad

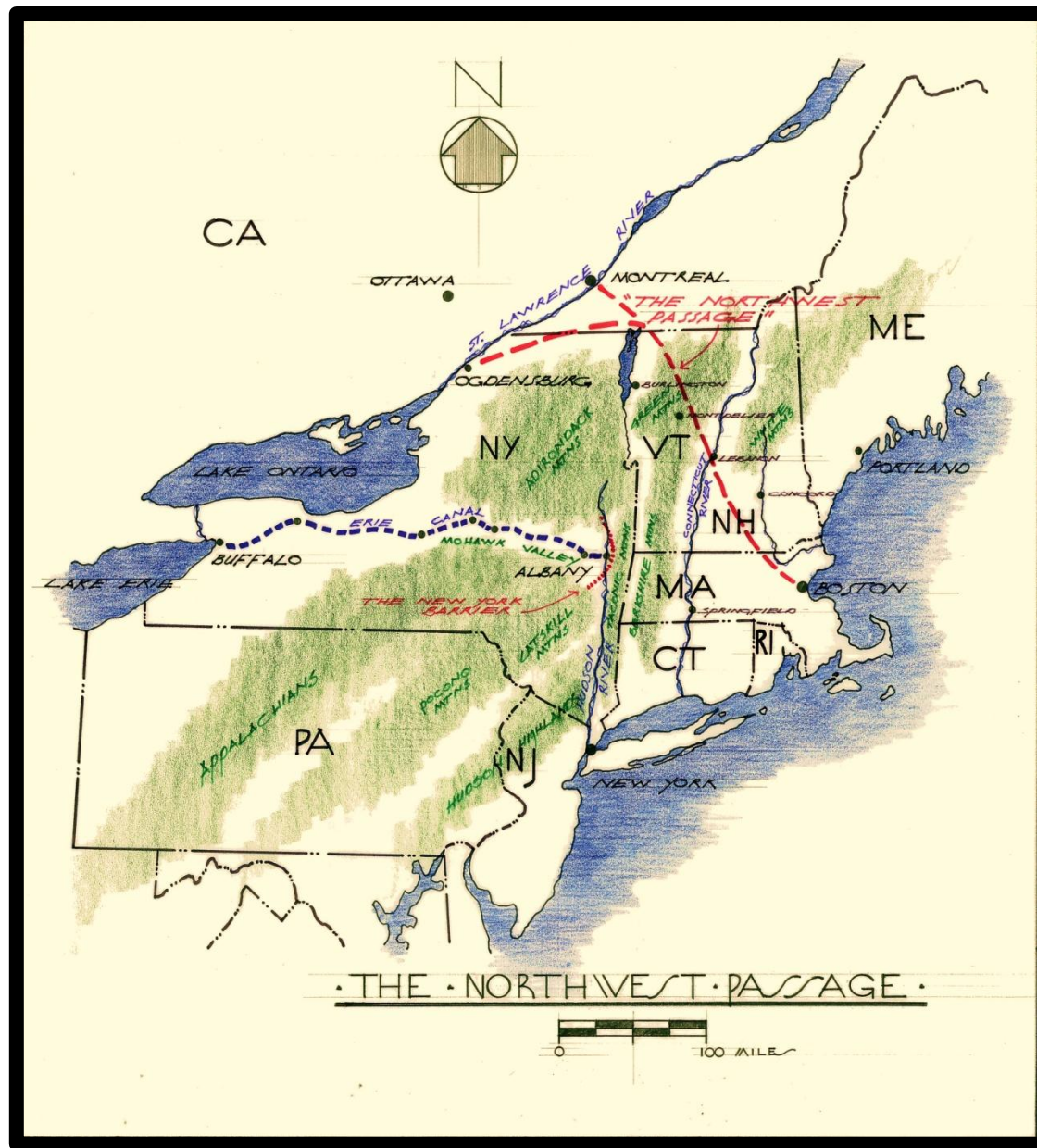
**The Stockton & Darlington Railway in Great Britain
Opened September 27, 1825**





The Concept :

Railroads could connect Boston with the Great Lakes, the Upper Mid-West, and Montreal via northern New England and Canada.



The Problem:

How to get around the “New York Barrier”

The Answer to the “New York Problem”

- ***Build railroads northwest out of Boston, across New Hampshire and Vermont to Burlington at Lake Champlain;***
- ***Move cars and freight by water across Lake Champlain to New York, or go up and around the top of the Lake;***
- ***Construct a railroad across northern New York state to Ogdensburg at the St. Lawrence River and Lake Ontario.***

Approximately 400 miles of railroad track in total.

Part II

***Chartering, Financing, and
Constructing the Early Railroads
into
White River Junction***

Massachusetts Charters Three

Railroads

- **Boston & Lowell Railroad**
 - *Chartered June 8, 1830*
 - *Boston to Lowell*
- **Boston & Providence Railroad**
 - *Chartered June 22, 1831*
 - *Boston to Providence, RI*
- **Boston & Worcester Railroad**
 - *Chartered June 23, 1831*
 - *Boston to Worcester*



-Boston, Massachusetts-

By 1840 early railroads were radiating out from the city heading north, west and south.

Financed by Boston and British interests.

1830: First Stirrings in Vermont

January 26, 1830

First meeting in Montpelier to discuss railroads.

Formation of a committee to report on the subject.

February 2, 1830

***Resolution supporting the creation of a railroad from
Boston to Lowell; Concord, NH; Lake Champlain; to
Ogdensburg, NY.***

February 22, 1830

***Formation of the Vermont Railroad Association in
Montpelier, Vermont***

Vermont Railroad Association Meetings

1830

March 23

First meeting in Ogdensburg, NY

April 6

First meeting in Concord, NH

May 12

First meeting in Burlington, VT

May 26

First meeting in Malone, NY

October 6, 1830

“General Railroad Convention”

Held in Montpelier, VT

48 delegates in attendance

from

***New York, Vermont, New Hampshire, and
Massachusetts.***

-Beginnings in New Hampshire- **The First Railraod Charter**

January 1, 1833

The Boston & Ontario R. R. Company

“From any point in southerly line of state, in or near Dunstable, northwardly and westerly to the westerly line of the state on Connecticut river.”

This line was never Built.

-1835 in New Hampshire-

- **Nashua & Lowell R. R. Corporation**
 - *Chartered June 23, 1835.*
 - *Built 14.5 miles from the NH border to Nashua Village.*
- **Concord R. R. Corporation**
 - *Chartered June 27, 1835.*
 - *Built 34.36 miles from Nashua Village to Concord.*
- **Keene R. R. Company**
 - *Chartered June 27, 1835*
 - *From Keene to the NH / MA border at Fitzwilliam or Rindge. Never Built.*

-In the Connecticut River Valley-

January 20, 1836

A convention held in Windsor, Vermont

154 influential persons attended

From Hartford, CT to Newport, VT

“...for the purpose of taking preliminary measures for the construction of a Rail Road through the valleys of the Connecticut and Passumpsic Rivers to the St. Lawrence; connecting New Haven and New York.”

-1837 in New Hampshire-

Amos A. Brewster, a democrat in the NH Legislature from Hanover, and associates, largely from Lebanon, obtained a charter for the

“Concord & Lebanon R. R.”

“From any point in Concord, so as to enter on C.R.R., to the west bank of the Connecticut river, near mouth of the White river, in Lebanon.”

The idea was a railroad “turnpike” of sorts with toll houses and gates for the collection of tolls for persons using it.

No action was taken on the charter and it lapsed.

-1838 thru 1842 in New Hampshire-

1838

- ***An act to join the Nashua & Lowell corporations of NH and MA***

1839

- ***Dover & Winnipiseogee R.R.***
(Dover to Alton)
- ***Portland & Connecticut River R.R.***
(From Haverhill to Colebrook, NH – Never Built)

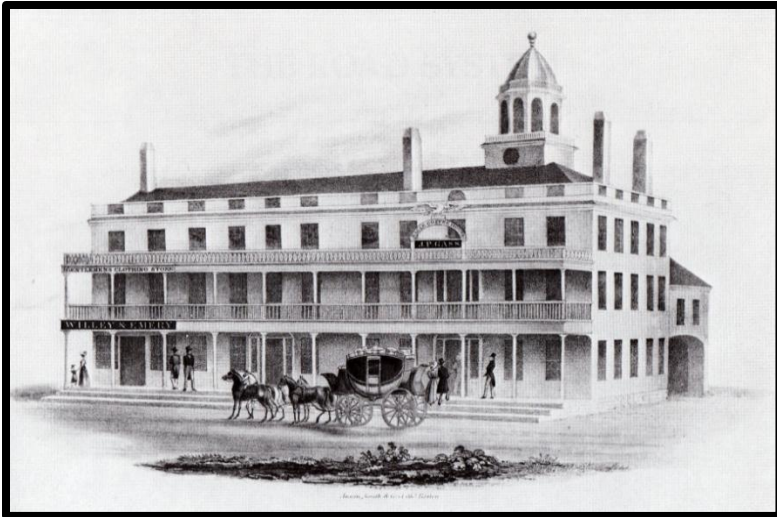
1842

Portsmouth & Dover R.R

(Portsmouth to Dover)

Rails reached Concord, New Hampshire **September 7, 1842**

Beyond Concord were only stage lines and poorly kept old turnpike and local highways.



***The Eagle Coffee House
and Hotel***

1842 – 1844

Strong well organized interest groups:

- ***Jacksonian Democrats***
- ***Stage line owners***
 - ***Teamsters***
- ***Tavern owners***

All worked to block further railroad development in New Hampshire.

-Vermont Charters Railroads-

- **Connecticut & Passumpsic Rivers Railroad**
 - *First chartered November 10, 1835*
 - *Re-chartered October 31, 1843 and November 10, 1845*
 - *From the Massachusetts State line to the Canadian border*
- **Vermont Central Railroad**
 - *First chartered November 10, 1835*
 - *Re-chartered October 31, 1843*
 - *From the Connecticut River to Lake Champlain*
- **Champlain & Connecticut River Railroad**
 - *Chartered October 31, 1843*
 - *From the Connecticut River to Lake Champlain*

-1843-

- **October 10, 1843**

- *Meeting in Lebanon of the “Friends of Internal Improvements in New Hampshire”*

- **Professor Rev. Charles B. Haddock**

- *Dartmouth College Class of 1816*
- *Professor at Dartmouth College*
- *Nephew of Daniel Webster*
- *Elected to the NH Legislature in 1844 / Liberty Party*
- *1850 charged affairs in Lisbon, Portugal*
- *Died at his home in West Lebanon, NH in 1861*

-What Broke the 1844 Political Impass-

- **The threat of a railroad from Fitchburg, MA. to Brattleboro, VT. bypassing New Hampshire.**
 - ***Chartered by both Massachusetts and Vermont in 1844 as the Vermont & Massachusetts Railroad Company.***
 - ***Approximately 73 miles from Fitchburg via Greenfield to Brattleboro, Vermont.***
- **The formation of the New Hampshire Board of Railroad Commissioners.**
 - ***Rendered railroad corporations public in certain cases.***
 - ***Approve proposed surveyed routes.***
 - ***Handle all land damages and land taking.***
 - ***Cap and oversee railroad corporation profits.***

-December 27, 1844-

New Hampshire Chartered Five Railroads

- **Northern Railroad of New Hampshire**
 - ***Concord to West Lebanon, NH = 69 +/- Miles***
- **Ashuelot R. R. Company**
 - *Keene to Hinsdale, NH = 24 miles +/-*
- **Cheshire R. R. Company**
 - *South Ashburnham, MA to Walpole, NH = 53 Miles +/-*
- **Boston, Concord & Montreal R. R.**
 - *Concord to Haverhill, NH = 93 Miles +/-*
- **Colebrook R.R. Company** *(Never Built)*
 - *From the Maine to the Vermont border at Colebrook*

Additional lines into the Connecticut River Valley aimed at Vermont

- **Wilton R. R. Company** (Never Built)
 - Chartered December 28, 1844
 - Concord to Marlow and Charlestown, NH
- **New Hampshire Central Railroad** (Never Built)
 - Chartered June 24, 1848
 - Manchester to Claremont
- **Concord & Claremont Railroad** (Finished 1872)
 - Chartered June 24, 1848
 - Concord to Claremont

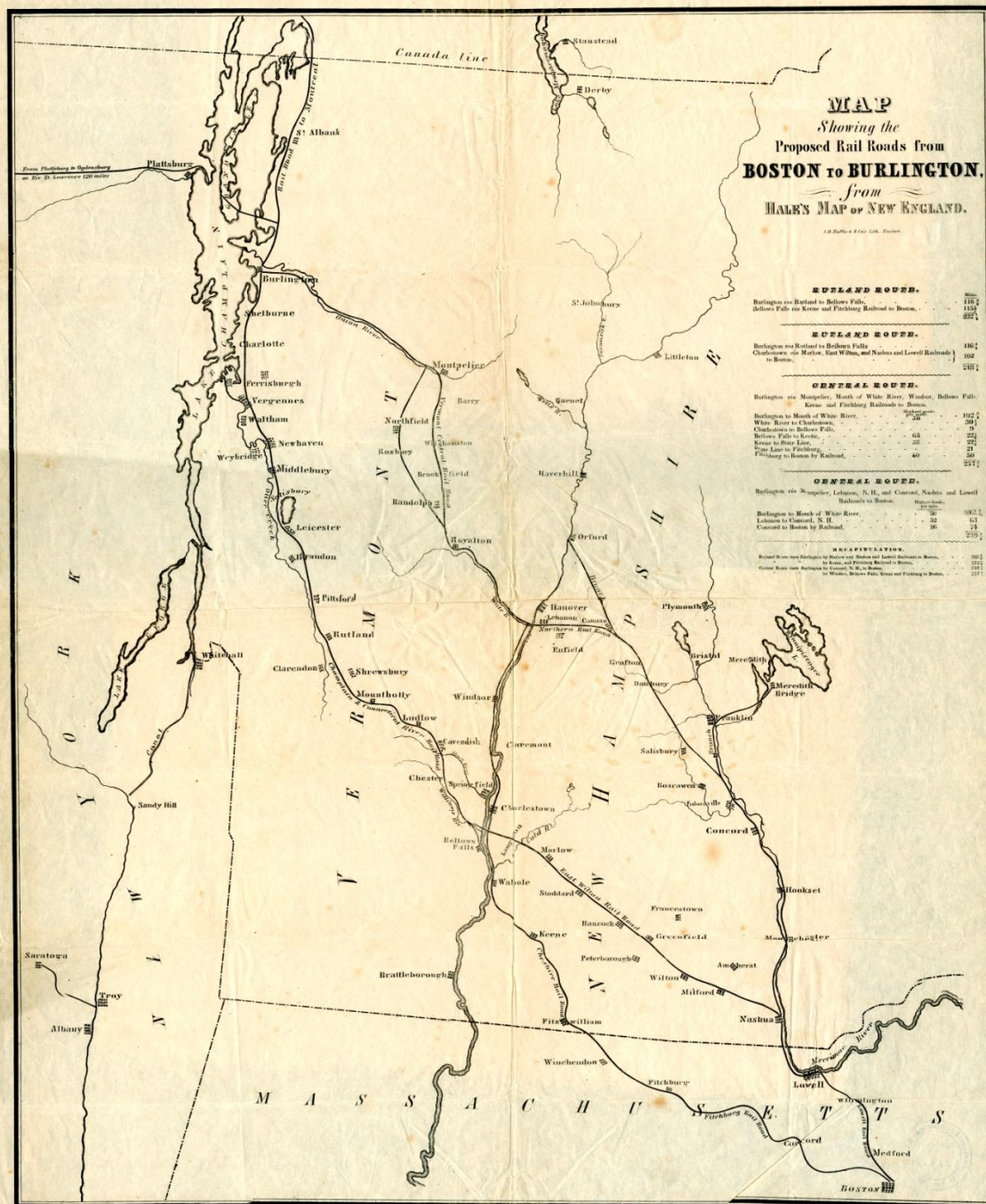
“Map Showing the Proposed Rail Roads from Boston to Burlington”

Published by
J. H. Bufford & Company
Lithographers
Boston

1845

Showing Two Competing
Routes

“The Central Route”
“The Rutland Route”



“The Central Route”

Option #1 = 257 Miles

***Burlington via Montpelier, Mouth of the White River,
Windsor, Bellows Falls, Keene, and the Fitchburg RR
to Boston.***

Option #2 = 239 Miles

***Burlington via Montpelier, Lebanon, NH, Concord,
and the Nashua & Lowell RR to Boston.***

“The Rutland Route”

Option #1 = 213 Miles

Burlington via Rutland to Bellows Falls, Charlestown, Marlow, East Wilton, and the Nashua & Lowell RR to Boston.

Option #2 = 232 Miles

Burlington via Rutland to Bellows Falls, Keene, and the Fitchburg RR to Boston.

“The Orford Option”

1844 – 45: Two possible routes proposed thru Orford:

- ***The “Goose Pond Route”.***
- ***Second route following the eastern bank of the Connecticut River north from Hanover.***

A meeting was held in Orford at Carlton’s Hotel on February 7, 1845:

- ***Very strong opposition from:***
 - ***Citizens of Orford and Bradford, VT***
 - ***The Boston, Concord & Montreal Railroad***
- ***Very strong support from:***
 - ***Citizens of Piermont and Haverhill, NH***
 - ***The Connecticut & Passumpsic Rivers Railroad***

The Orford Option Continued

- ***A proposed line from Canaan to Orford was first shown on a map published in Boston in 1845.***
- ***The Connecticut & Passumpsic Rivers Railroad began building their Wells River Division north from Sawyer's Mountain in Fairlee September 7, 1846 – possible bridge across the Connecticut River at Orford.***
- ***The Grafton Railroad was chartered July 2, 1847 to run "From westerly boundary of state, in Lebanon, to a point in westerly boundary of state in Orford."***

Estimated Per Mile Railroad
Pre - Construction Costs
1845

- **Land Damages:** **\$1,000.**
- **Excavation, Grading, Bridges, & Culverts:** **\$8,000.**
- **Superstructure (Rails, Ties, Etc.):** **\$8,000.**
- **Depots, Fencing, & Fixtures:** **\$700.**
- **Engineering & Incidental Expenses:** **\$600.**

Total Estimated Cost per Mile: **\$18,300.**

(Equals about \$582,000 in 2014)

(Estimated Costs for the Northern Railroad)

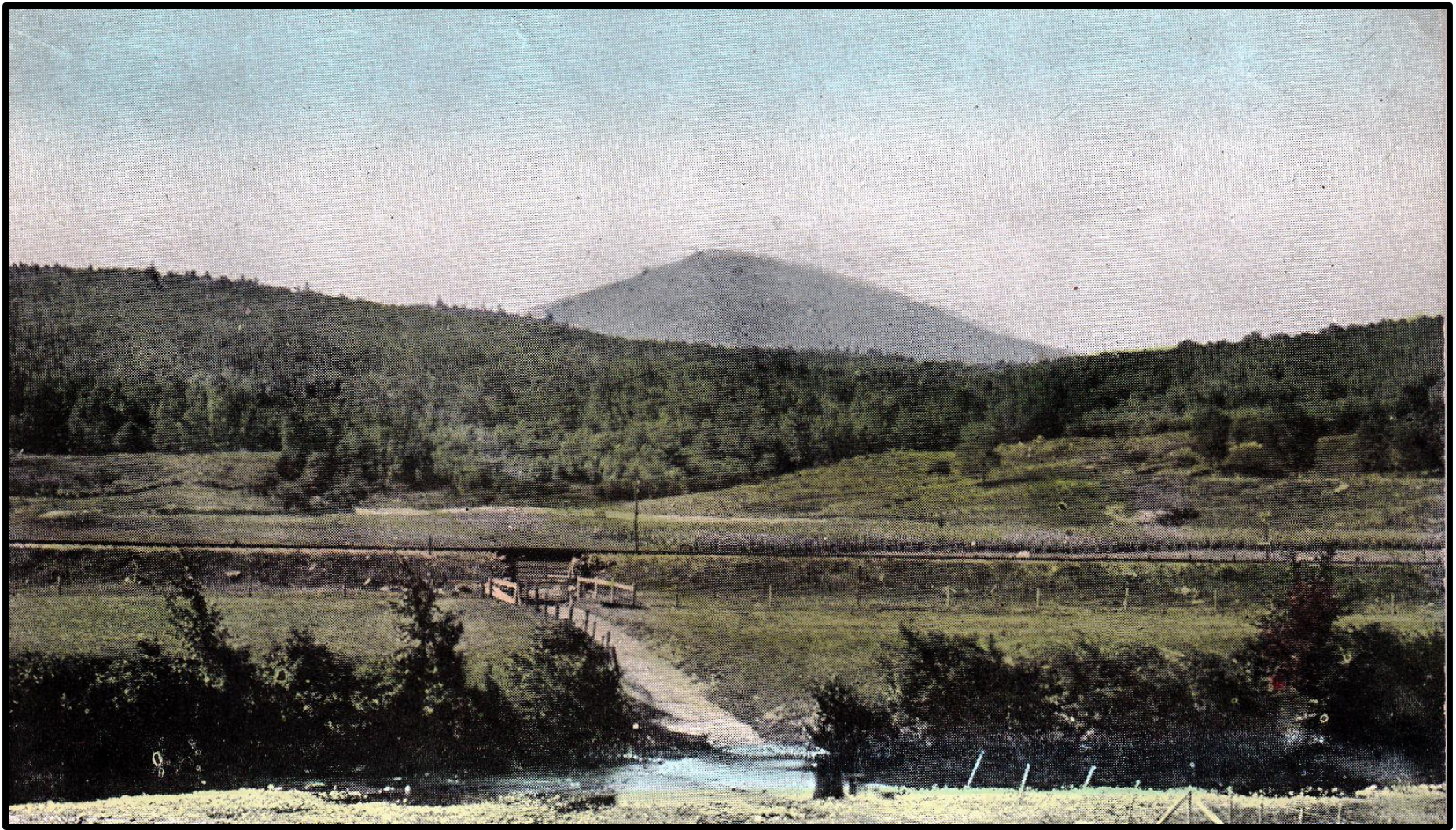


Laying out the Proposed Routes

After the charters were granted, surveying parties, engineers, and State agents were the first evidence of the coming of the railroads.



***A surveyor working on the Northern Railroad in Lebanon circa 1847.
Engineers and their surveying parties were part of the construction
from beginning to end.***



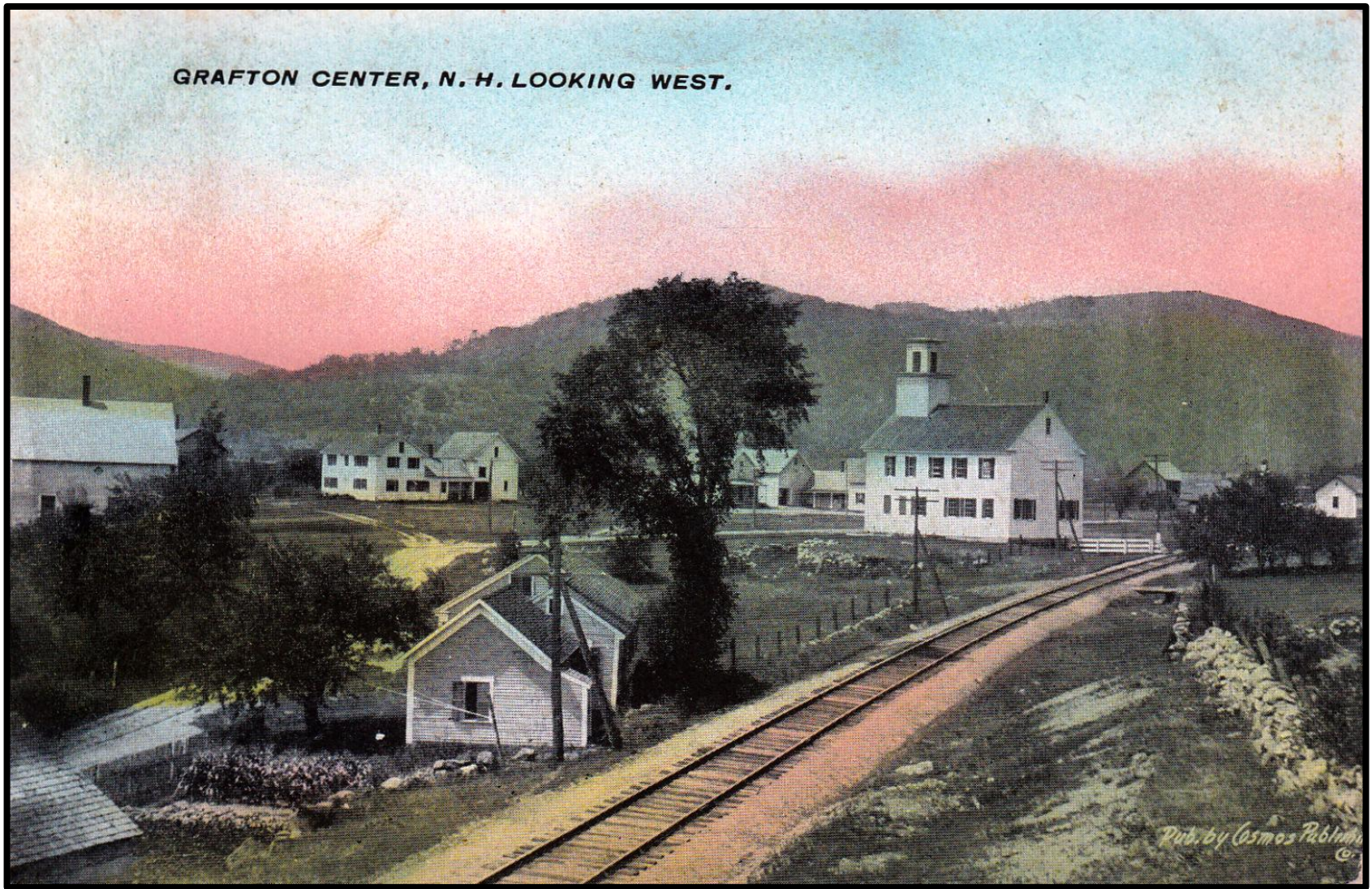
***From the begining the Northern Railroad was a well engineered,
financed, and constructed road.***

Scene between Andover and Potter Place, New Hampshire.



Most of the excavation, filling, and grading work was done by hand with animal drawn dump carts by Irish laborers 2,000 or more to a work gang at \$1.25 per day.

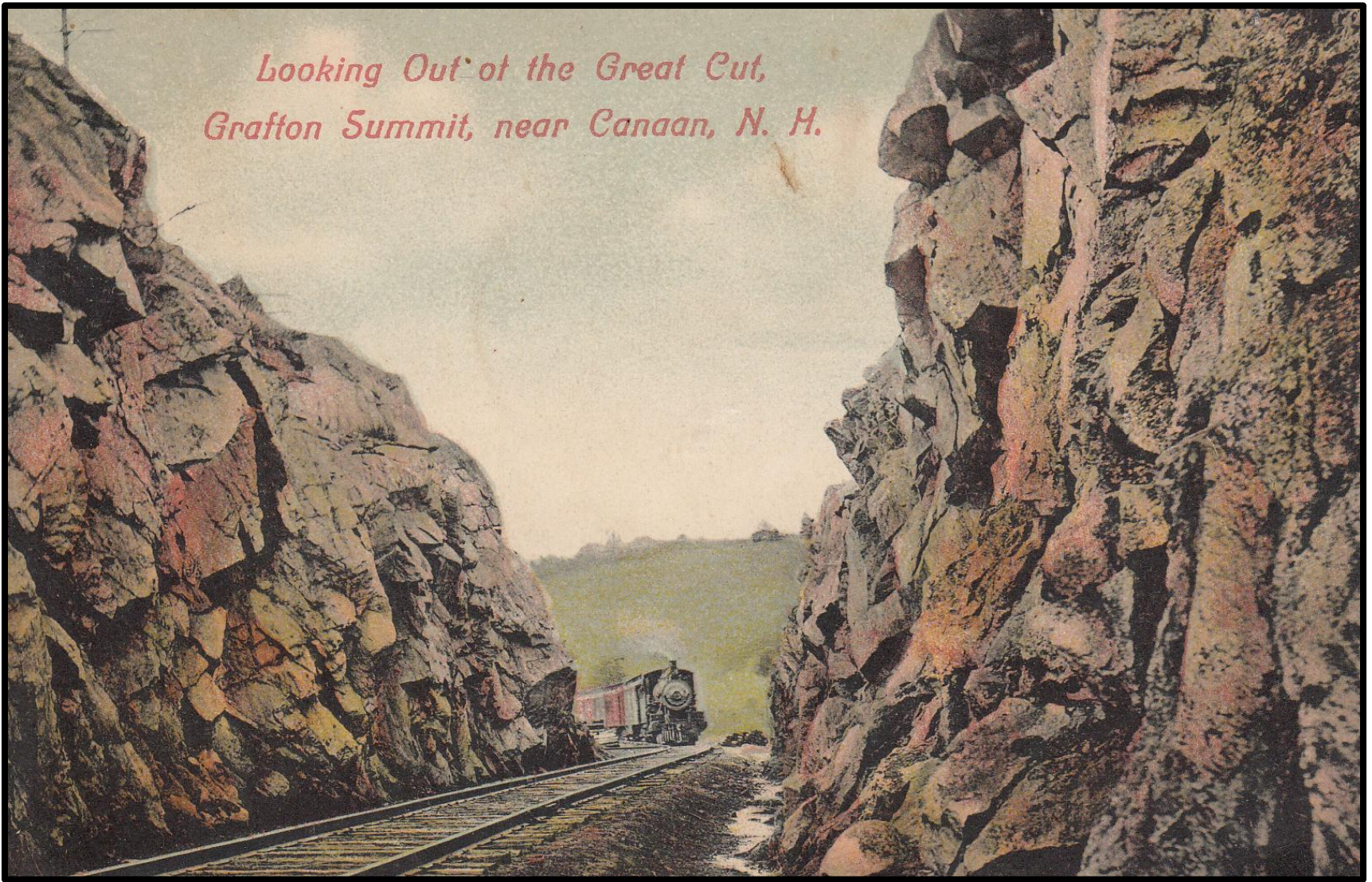
The Northern RR Between Potter Place and West Andover, NH



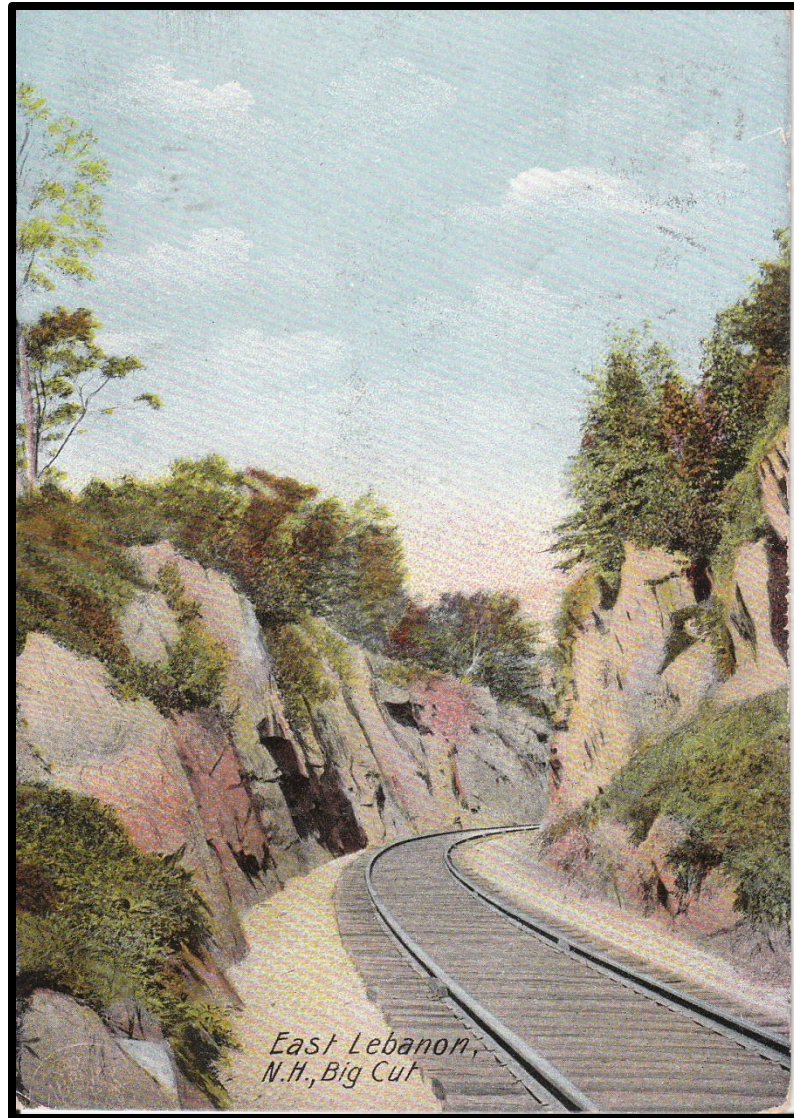
September 1, 1847

The Northern Railroad was opened from Concord to Grafton, NH.

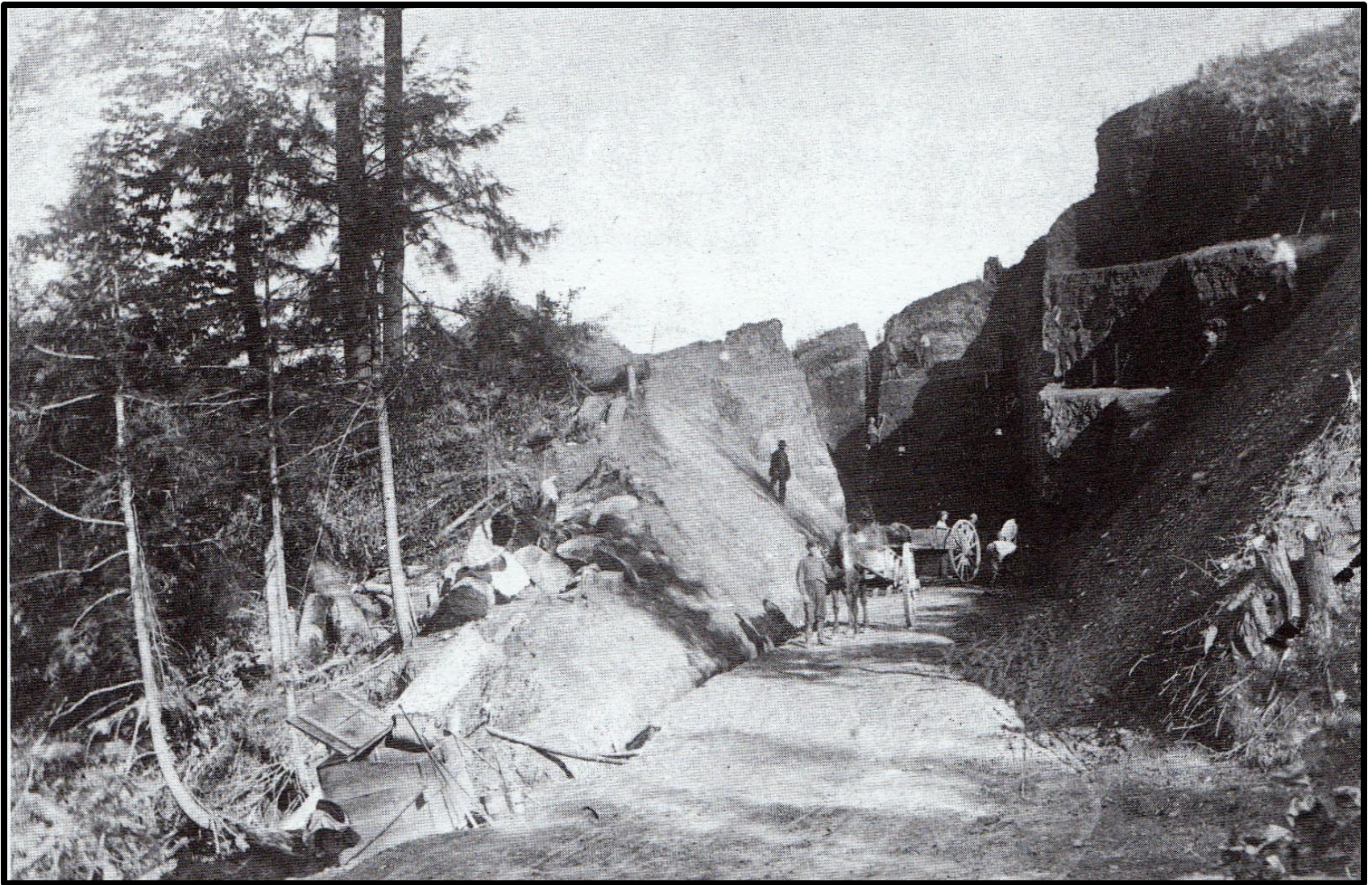
*Looking Out of the Great Cut,
Grafton Summit, near Canaan, N. H.*



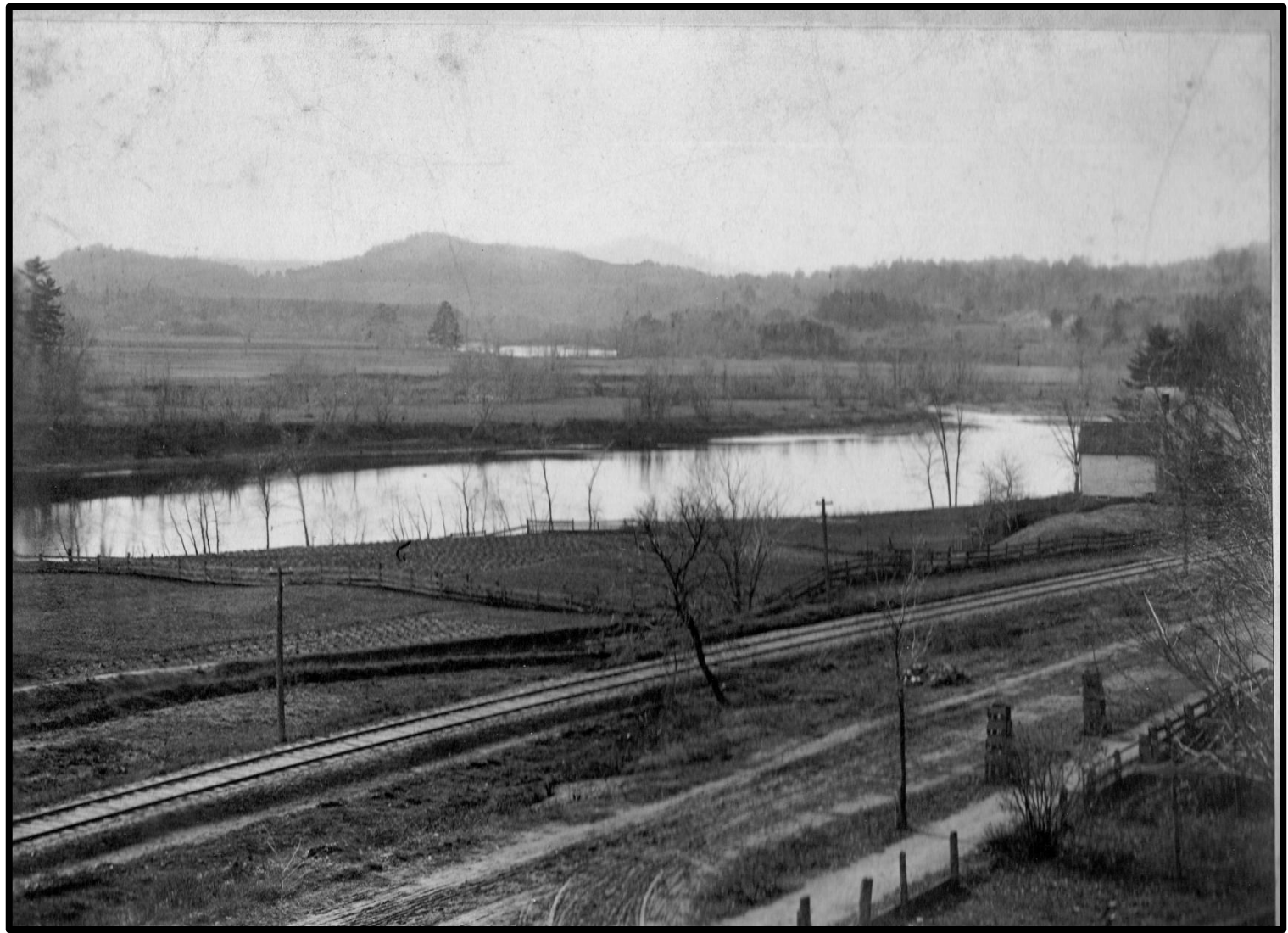
The "Great Cut at Grafton Summit"
Orange, New Hampshire
778 Feet above Concord, NH - Made in 1846 - 47



***Rock cut at Lake Mascoma Near East Lebanon, New Hampshire
Northern Railroad of New Hampshire
1847***



***The Northern Railroad of New Hampshire
Construction between Lebanon and West Lebanon, NH.
1847***



***The first railroad tracks laid down in the State of Vermont
-immediately south of White River Junction-
were by the Vermont Central Railroad in early 1848.***



The Connecticut & Passumpsic Rivers Railroad

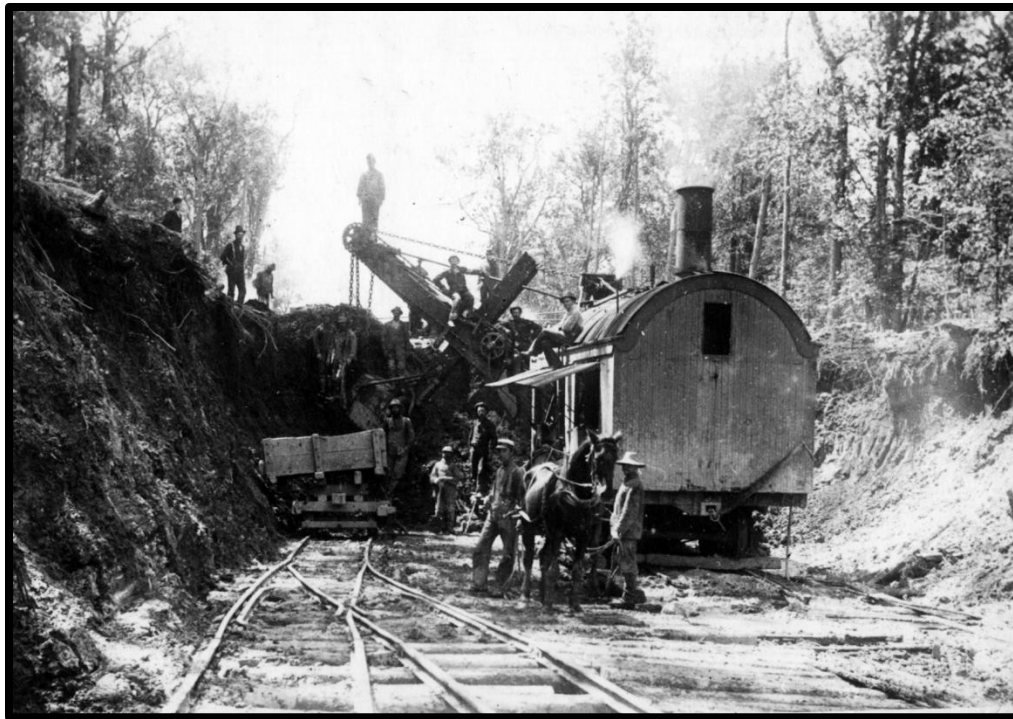
Began building the Wells River Division north from Fairlee September 7, 1846.

Began building the White River Division south from Fairlee Summer 1847.



The Newbury Cut
Connecticut & Passumpsic Rivers Railroad
Newbury, Vermont
1848

***An early steam power shovel working in the
Connecticut River Valley, circa later 1840's
Exact location and date unknown***



***“A steam shovel was
brought up to work on
William U. Bailey’s farm,
and multitudes flocked
to see the strange
machine.”***

***Frederick P. Wells;
History of Newbury,
Vermont***

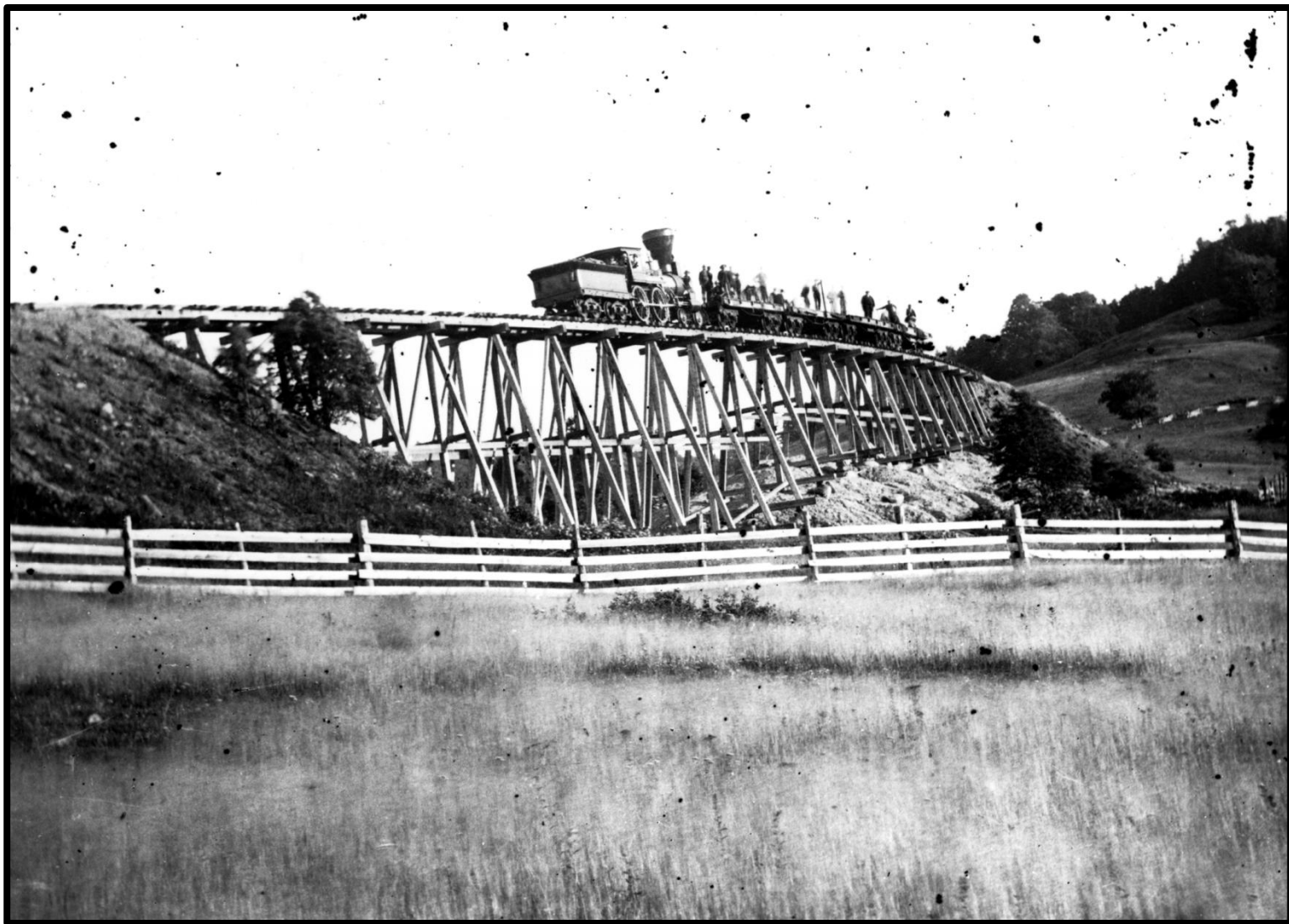
1902



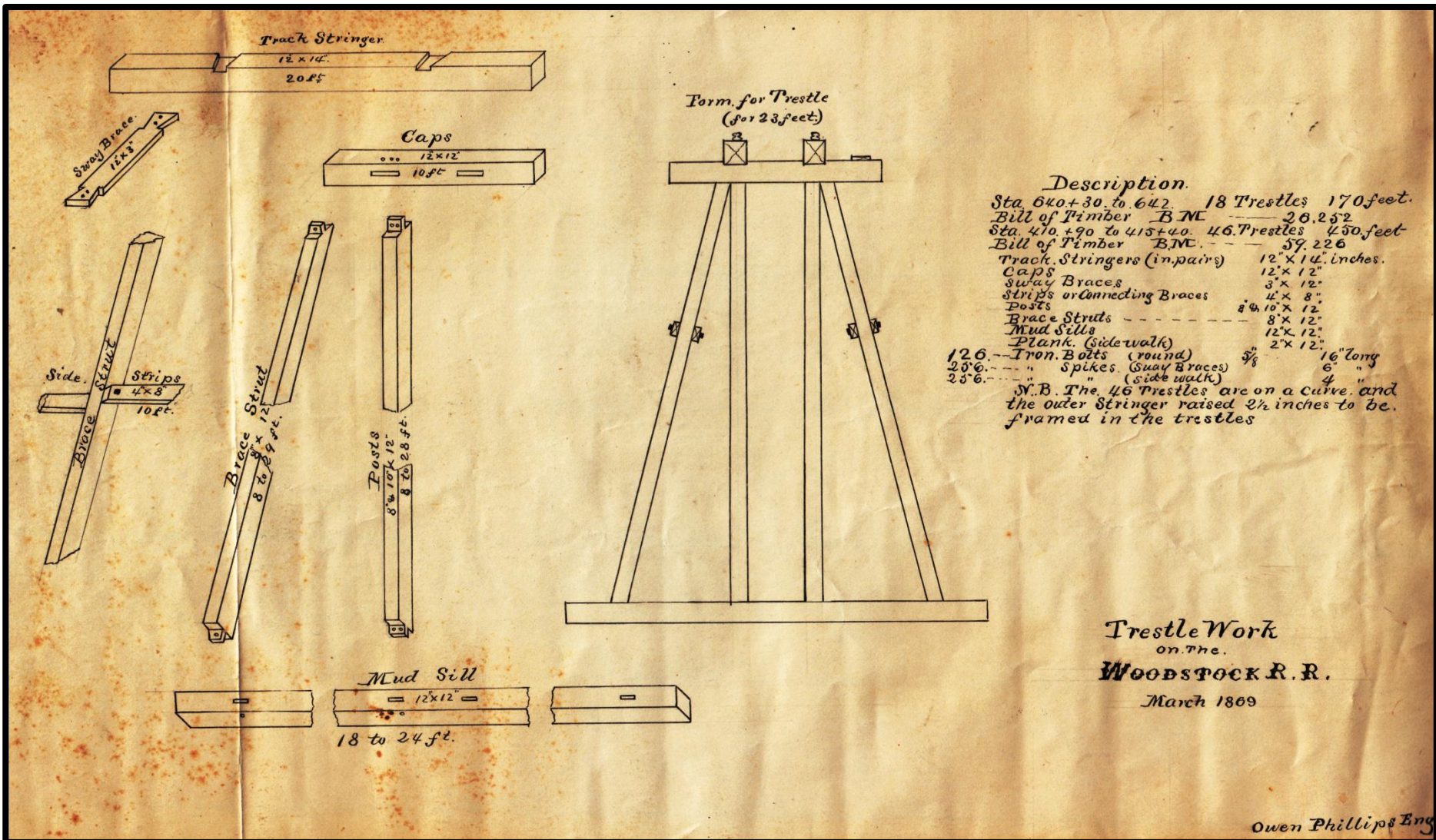
Connecticut & Passumpsic Rivers Railroad
Rock cut thru Ingall's Hill south of Wells River, Vermont
1848



Connecticut & Passumpsic Rivers Railroad
Looking north above Wilder, Vermont
1848



***A work or "gravel" train doing
trestle filling after the road was in operation.
Shown is the Woodstock Railway in the Fall 1875.***



**Engineer's drawing of a temporary trestle.
Woodstock Railway
March 1869**

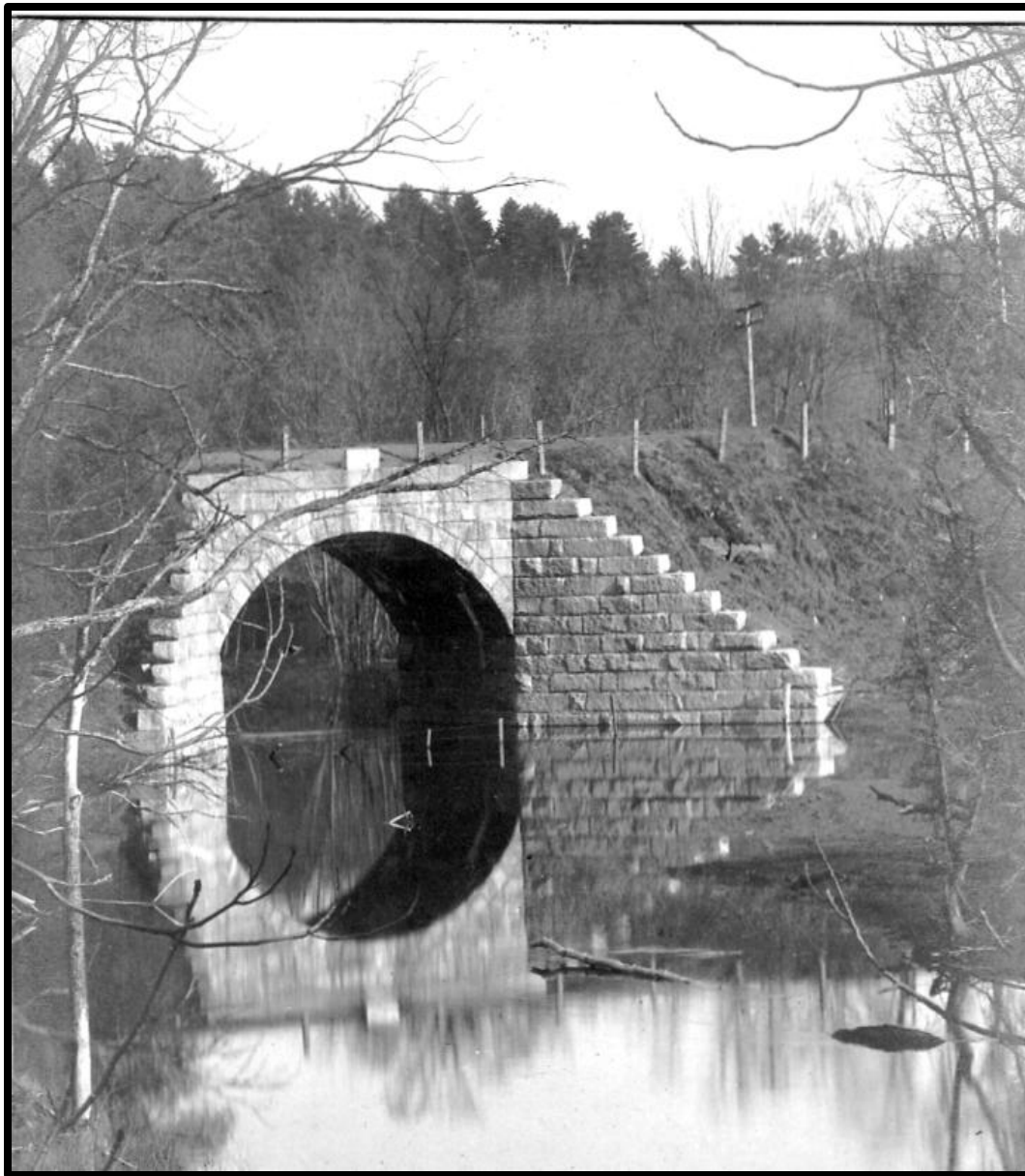
Northern Railroad of New Hampshire

***Stone Arched Bridge at Webster Lake Brook; Franklin, N.H.
Constructed 1846***

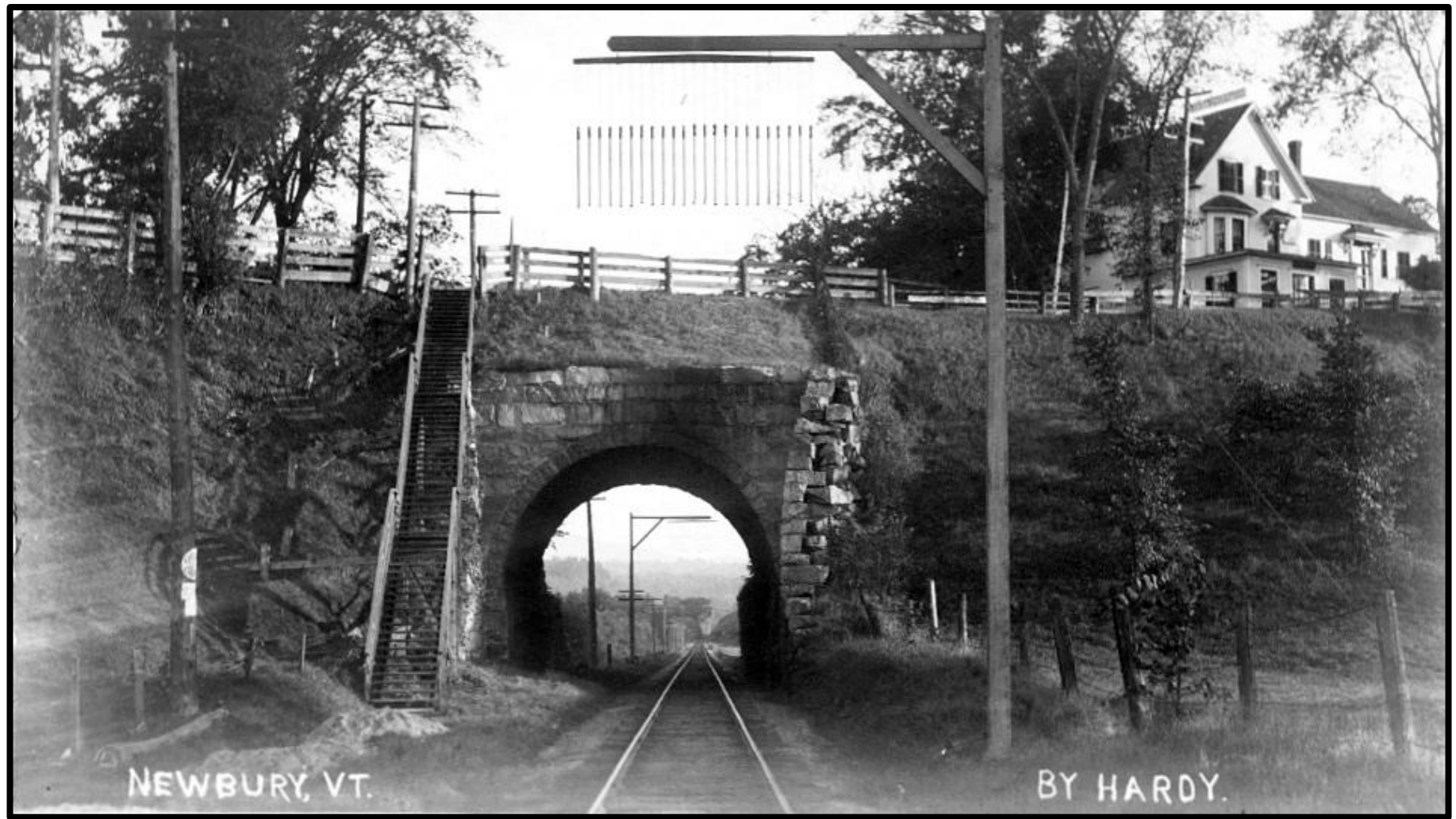




***Stone Bridge Glen Road; West Lebanon, New Hampshire
Constructed by the Northern Railroad of NH in 1847 - 48***



***Stone arched bridge over Blood Brook; Norwich, Vermont
Constructed by the C&PRR in 1847 - 48***



***Stone arch highway bridge; Newbury, Vermont
Constructed by the C&PRR in 1848
Demolished and Replaced Circa 1970***



It required the construction of 14 wooden bridges crossing the Mascoma River to get the Northern Railroad from Lake Mascoma down into West Lebanon



***The first railroad bridge at West Lebanon - built spring 1848.
Cost \$21,600.; Three Spans at 200 Ft. = 600 Ft. Total Length.
Image made in 1859.***



Replacement Connecticut River railroad bridge at West Lebanon - constructed in 1871.

Looking from West Lebanon, NH towards White River Junction, VT.

Actual Per Mile Post-Construction Costs

1850

- **Northern Railroad of New Hampshire**

Concord to West Lebanon (70 miles; as of 1851):

\$2,345,426. = ***\$33,506. per mile***

- **Vermont Central Railroad**

Windsor to the mouth of the White River (15 Miles):

\$566,520. = ***\$37,770. per mile***

- **Connecticut & Passumpsic Rivers Railroad**

Mouth of the White River to Wells River (40 miles):

\$1,149,626. = ***\$28,740. per mile***

-Construction Cost Comparisons-

Three periods of Transportation

- **The Fourth New Hampshire Turnpike in 1804:**
\$1,200 per mile = \$24,400 in 2014
- **The Northern Railroad in 1850:**
\$33,506 per mile = \$1,030,000 in 2014
- **The Interstate Highway System in 1964:**
\$1,000,000 per mile = \$7,500,000 in 2014

Relative Value Purchasing Power

Based on percentage increase in Consumer Price Index

-Northern Railroad Investors-

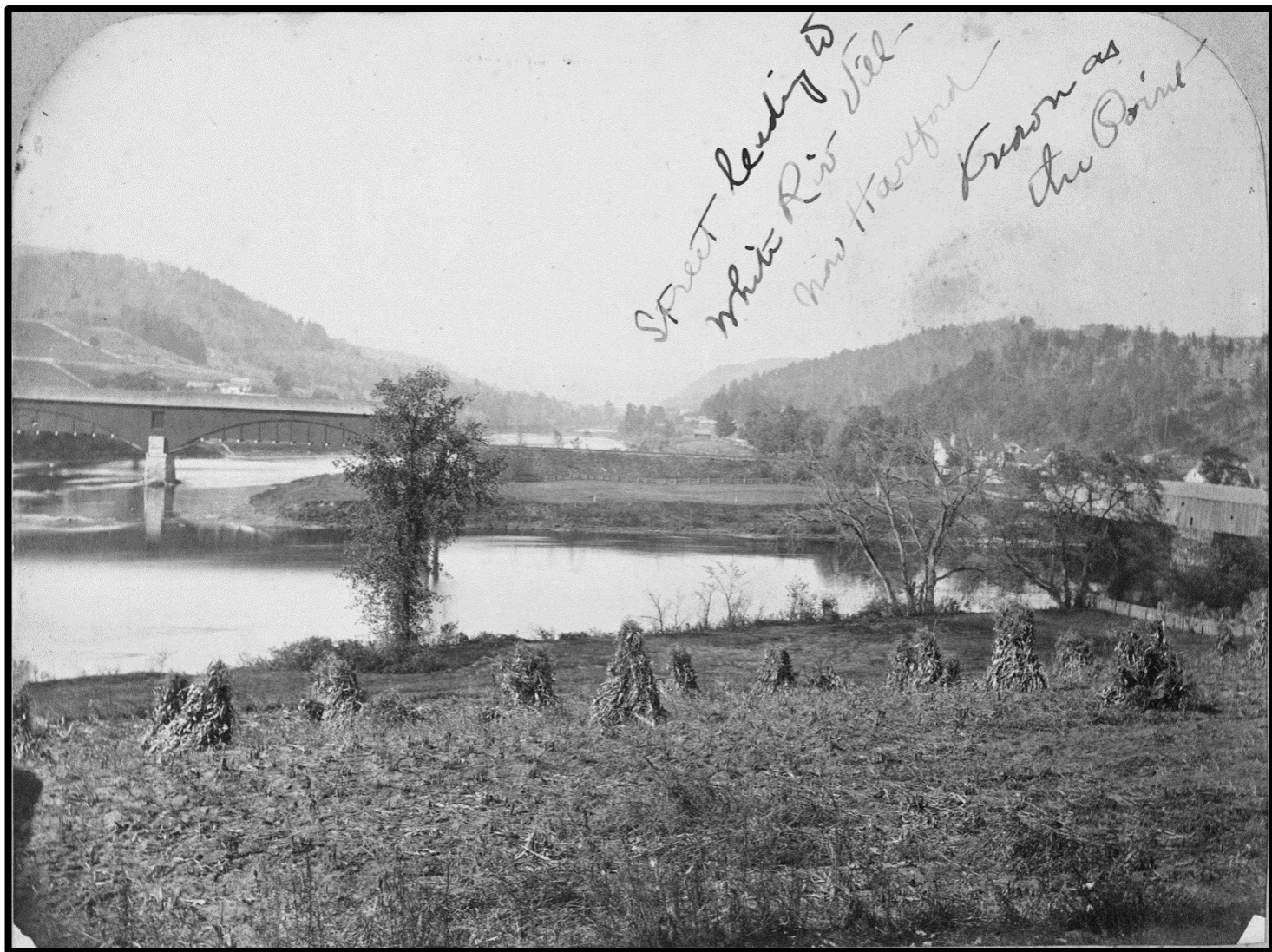
As of 1850

- ***27,684 total shares of stock issued at \$100 per share.***
- ***NH: 1,078 Shareholders / 10,432 shares.***
 - Concord: 120 shareholders / 1,408 shares***
 - Franklin: 63 shareholders / 932 shares***
 - Lebanon: 74 shareholders / 834 shares***
 - Enfield: 30 shareholders / 313 shares***
 - Hanover: 19 shareholders / 226 shares***
- ***MA: 760 stockholders with 13,964 shares.***

PART III

-1848-

Creating White River Junction



-1848-

***Three rail lines linked up at the confluence of the
Connecticut and White rivers***

-1848-

**The Junction of Rail Lines at the
Mouth of the White River**

- **Northern Railroad of New Hampshire**
Early June 1848: Complete full service to Concord, NH.
- **Vermont Central Railroad**
June 26, 1848: Opened 26 miles west to Bethel, VT.
- **Connecticut & Passumpsic Rivers Railroad**
October 10, 1848: Opened 28 miles north to Bradford, VT.

-1848-

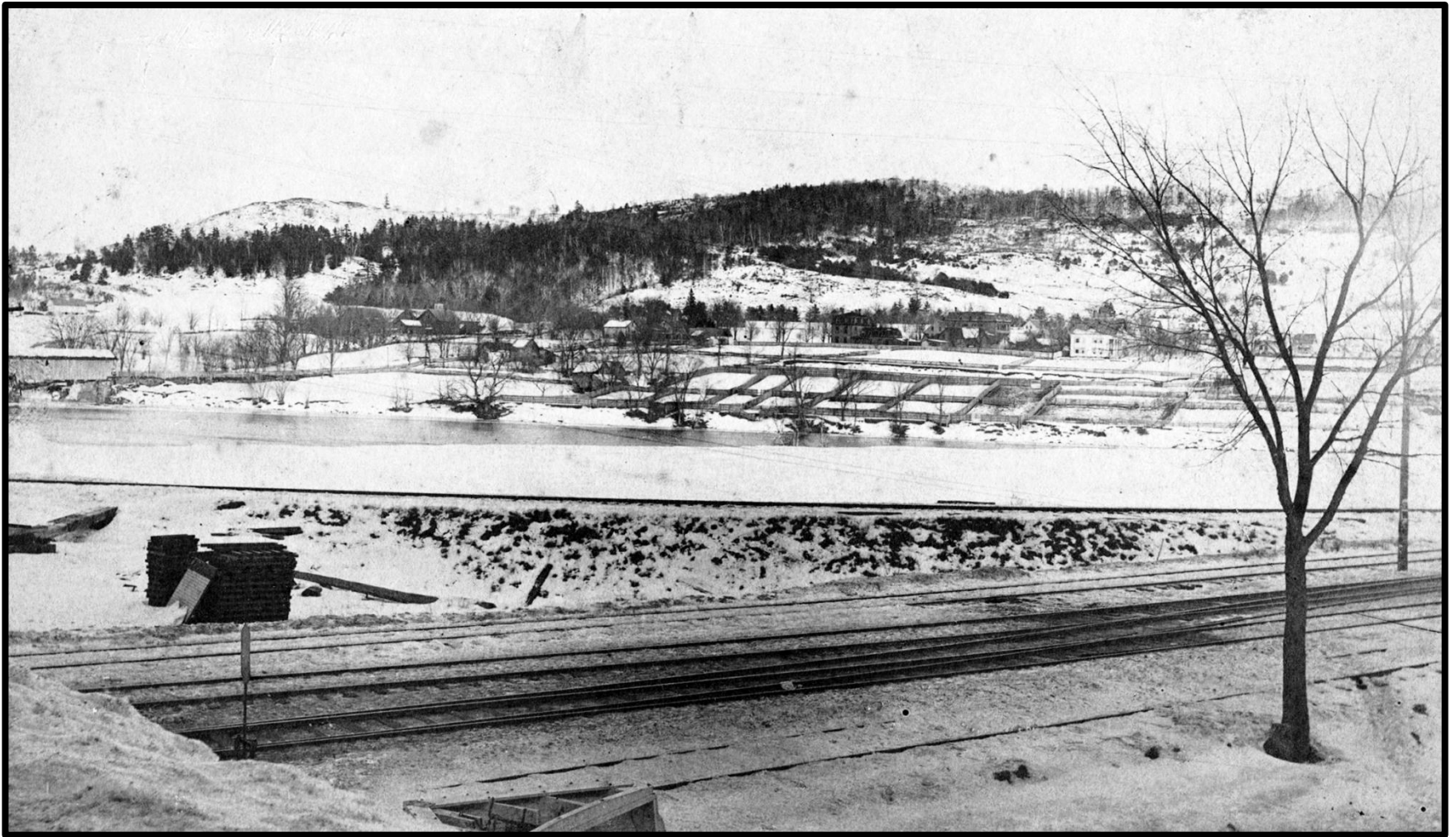
Northern RR Schedule and Rates

- ***Trains Left White River Junction for Concord:***
 - ***7:05 am and 12:55 pm***
- ***Trains Left Concord for White River Junction:***
 - ***10:30 am and 3:00 pm***
- ***Approximate travel time = 2 1/2 hours @ 23 mph***
- ***Ticket costs:***
 - ***Lebanon to Concord = \$1.75***
 - ***Lebanon to Boston = \$3.25***
- ***Freight costs Lebanon to Boston:***
 - ***\$.32 per 100 lbs. 1st Class***
 - ***\$.27 per 100 lbs. 2nd Class***

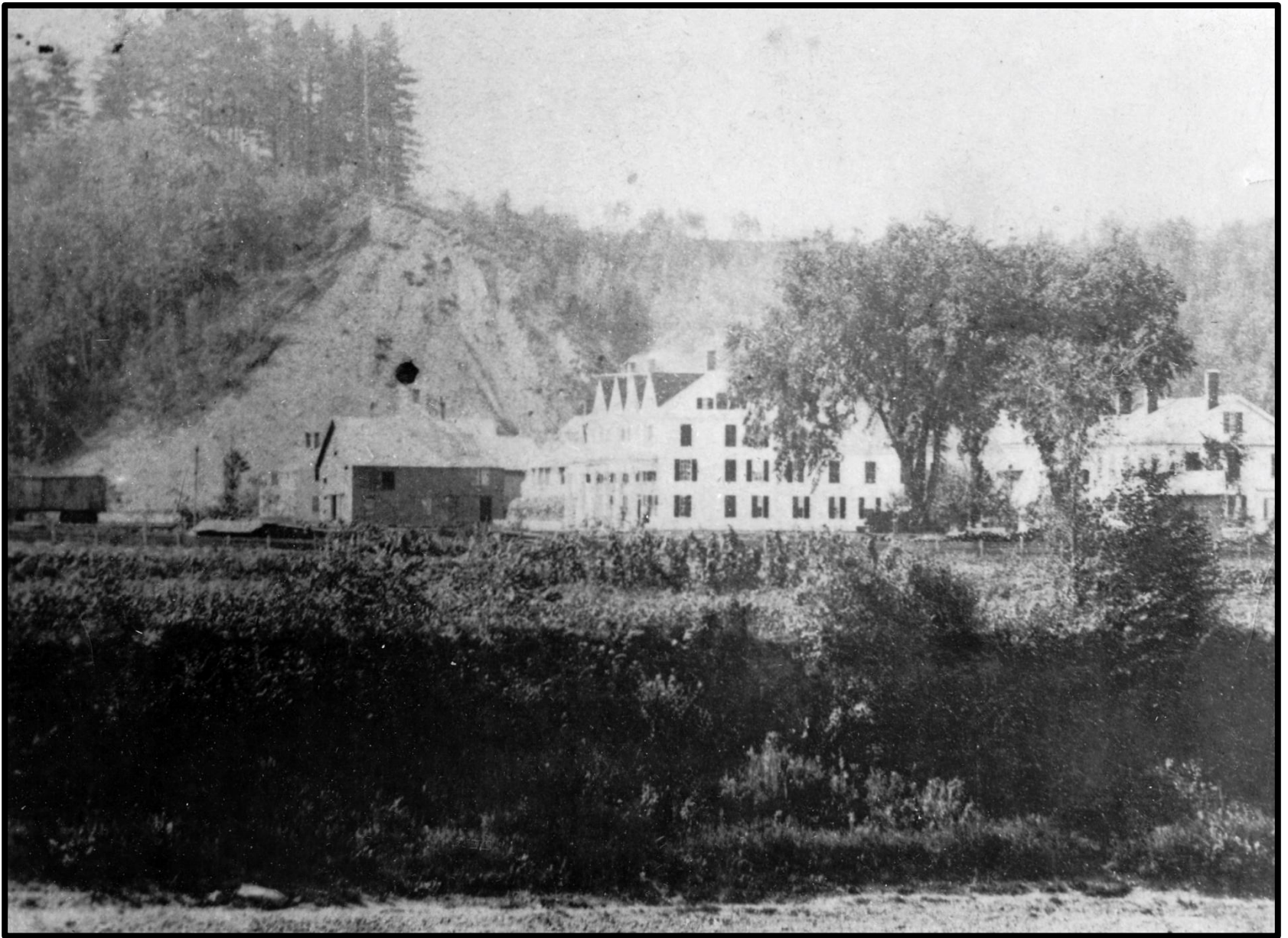
***From the Sixth Annual Report
Vermont Central Railroad Company
August 27, 1851***

“...the continuous line of railways from the waters of Lake Ontario at Ogdensburg and of the St. Lawrence at Montreal to tidewater at Boston and New York is finished, and distant nations are united in bonds of a common interest and intercourse.”

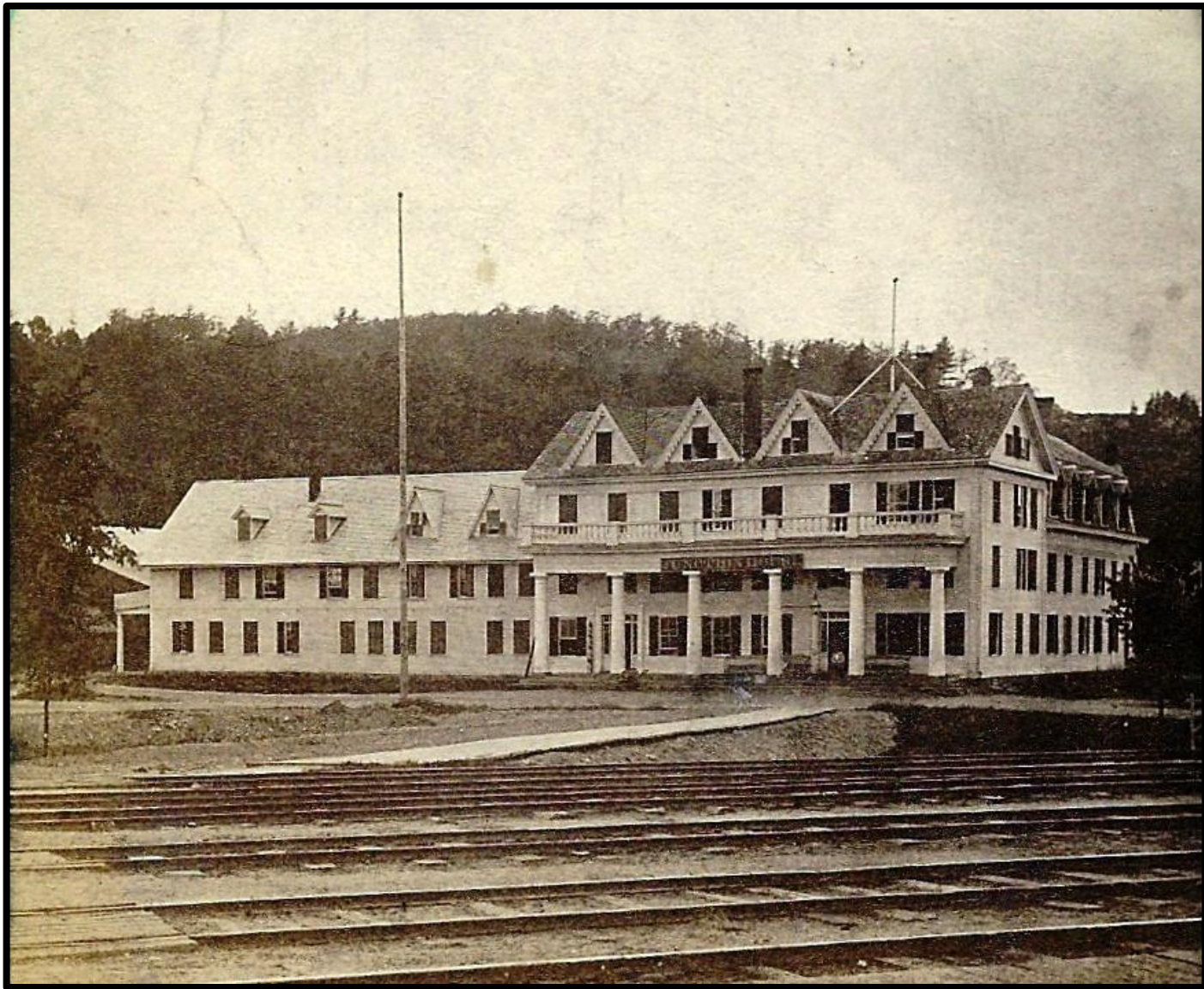
- United by seven (7) separate railroad companies, approximately 400 miles of track , and 21 years of effort.***
- Within 36 hours fresh butter from Ogdensburg, NY was delivered to Boston, MA.***



What had been farmers fields became crossed by railroad tracks in early 1848 from four directions and a new village area called White River Junction, Vermont was established. Looking northeast towards West Lebanon, New Hampshire



***A very early image of White River Junction, Vermont.
Note open gravel bank behind the village area.***



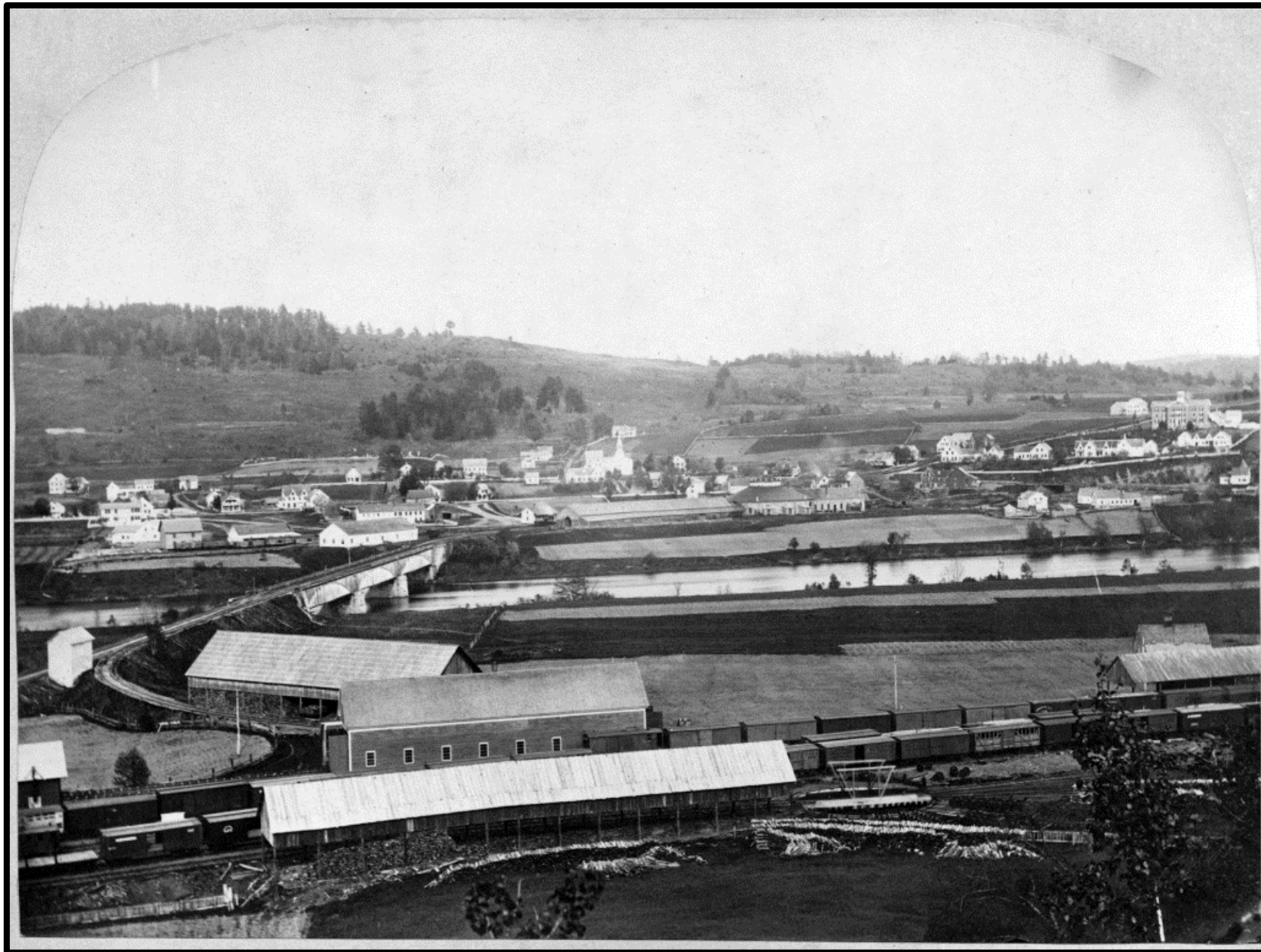
The first Junction House: 1849 – 1878
Originally a tavern in Enfield, N. H called the Grafton House
Moved to WRJ in 1849 by Col. Samuel Nutt



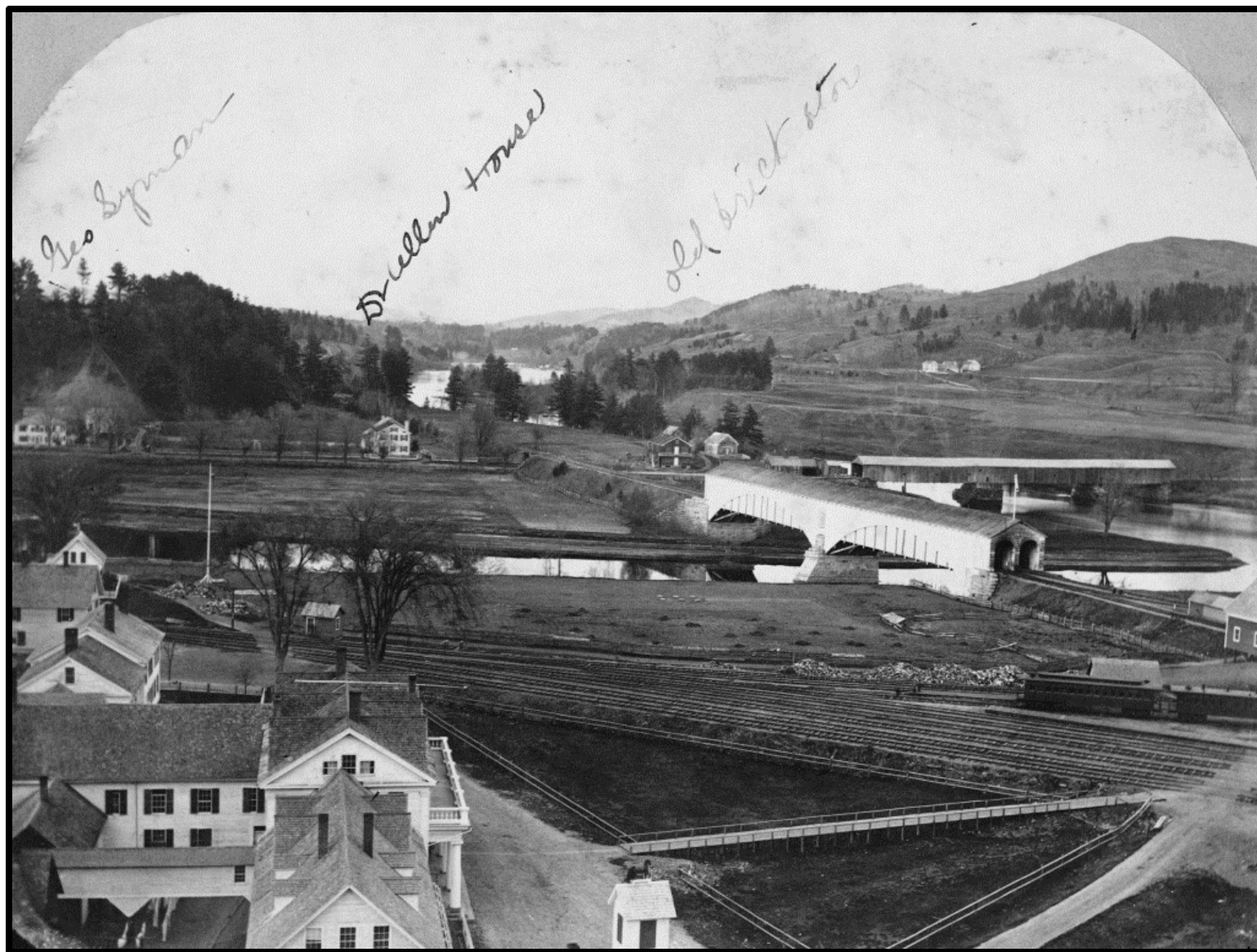
***The first Junction House
1849 - 1878***



***White River Junction – Tinkham's Store.
An early farmhouse became a general store.***

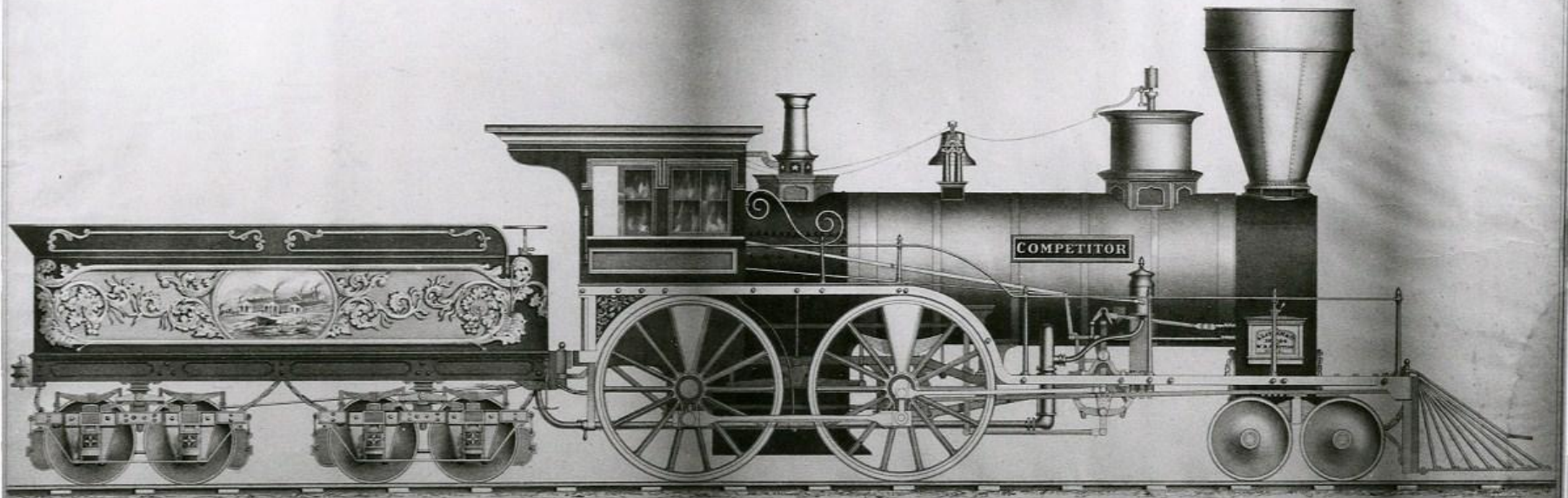


WRJ Looking East Towards West Lebanon in 1862.

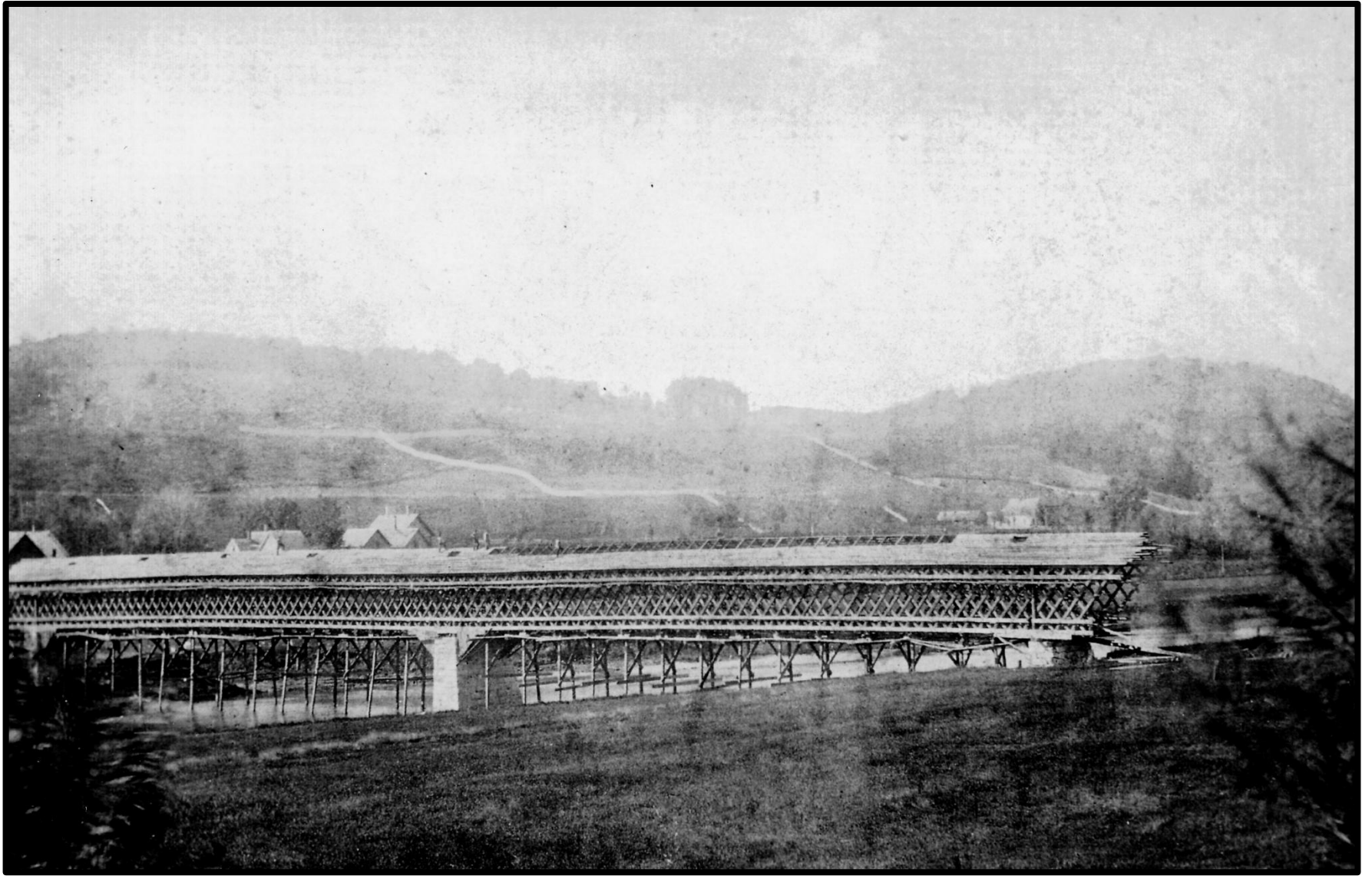


***WRJ Looking Northeast up the Connecticut River Valley in
1862.***

LOCOMOTIVE & TENDER
BY JOHN P. LAIRD,
BUILT AT.
LATHAM & CO'S WORKS,
W. R. JUNCTION, VT.



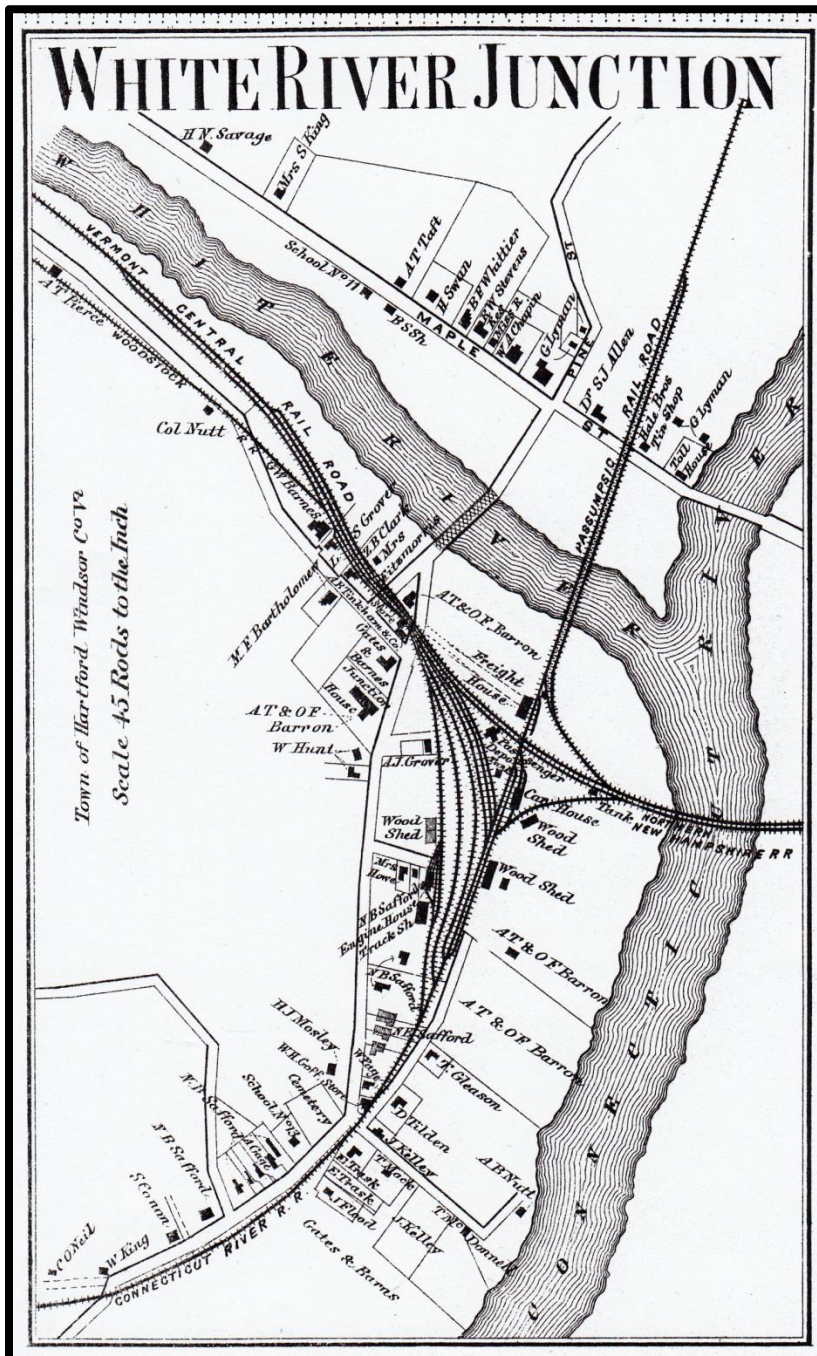
***Latham Locomotive Works
White River Junction, Vermont.
Had come and gone by the late 1850's.***

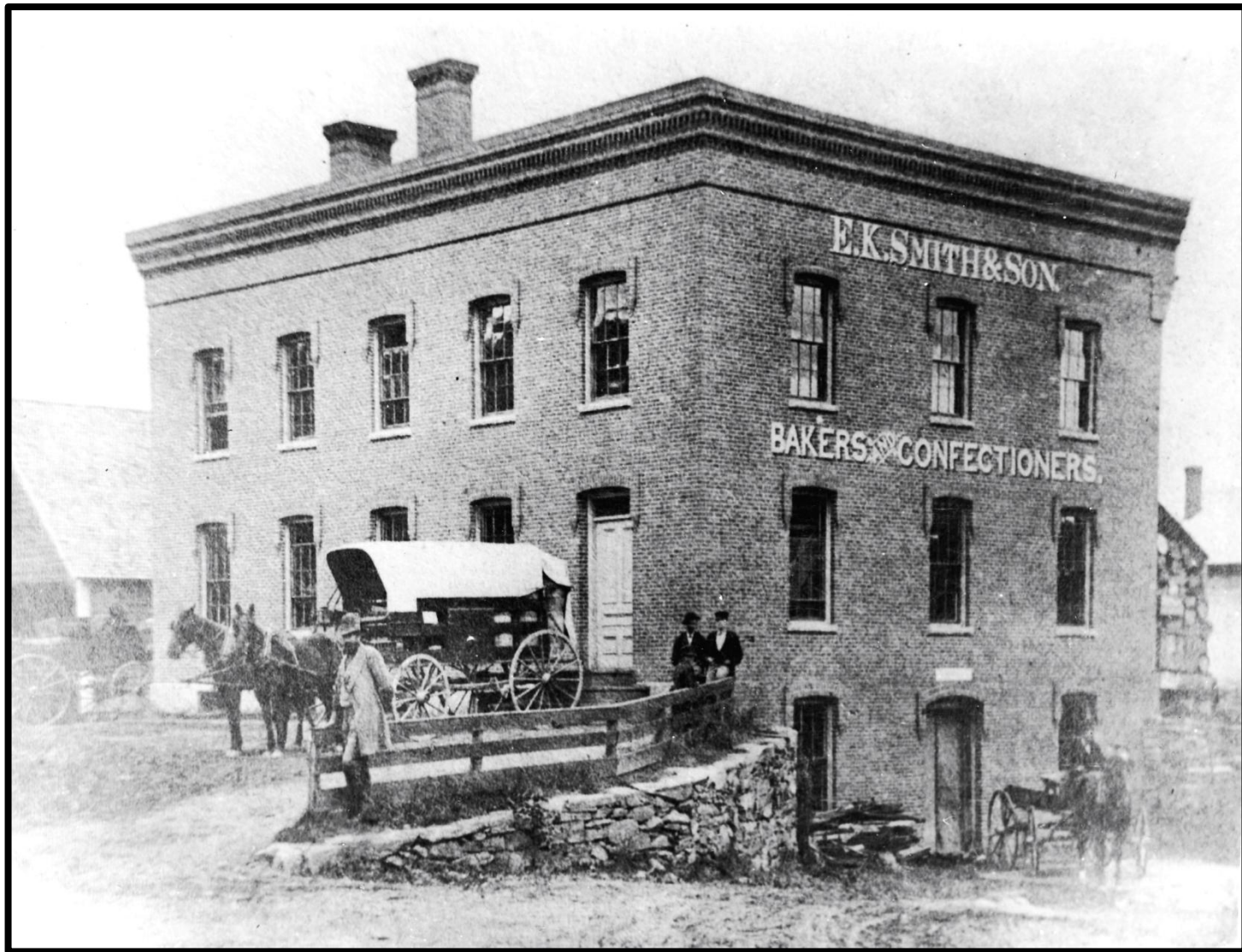


In 1867 a new highway bridge was constructed across the White River into White River Junction.

White River *Junction, Vermont* *1869*

*Where 20 years earlier only
several family farms and a
one room school house had
existed.*

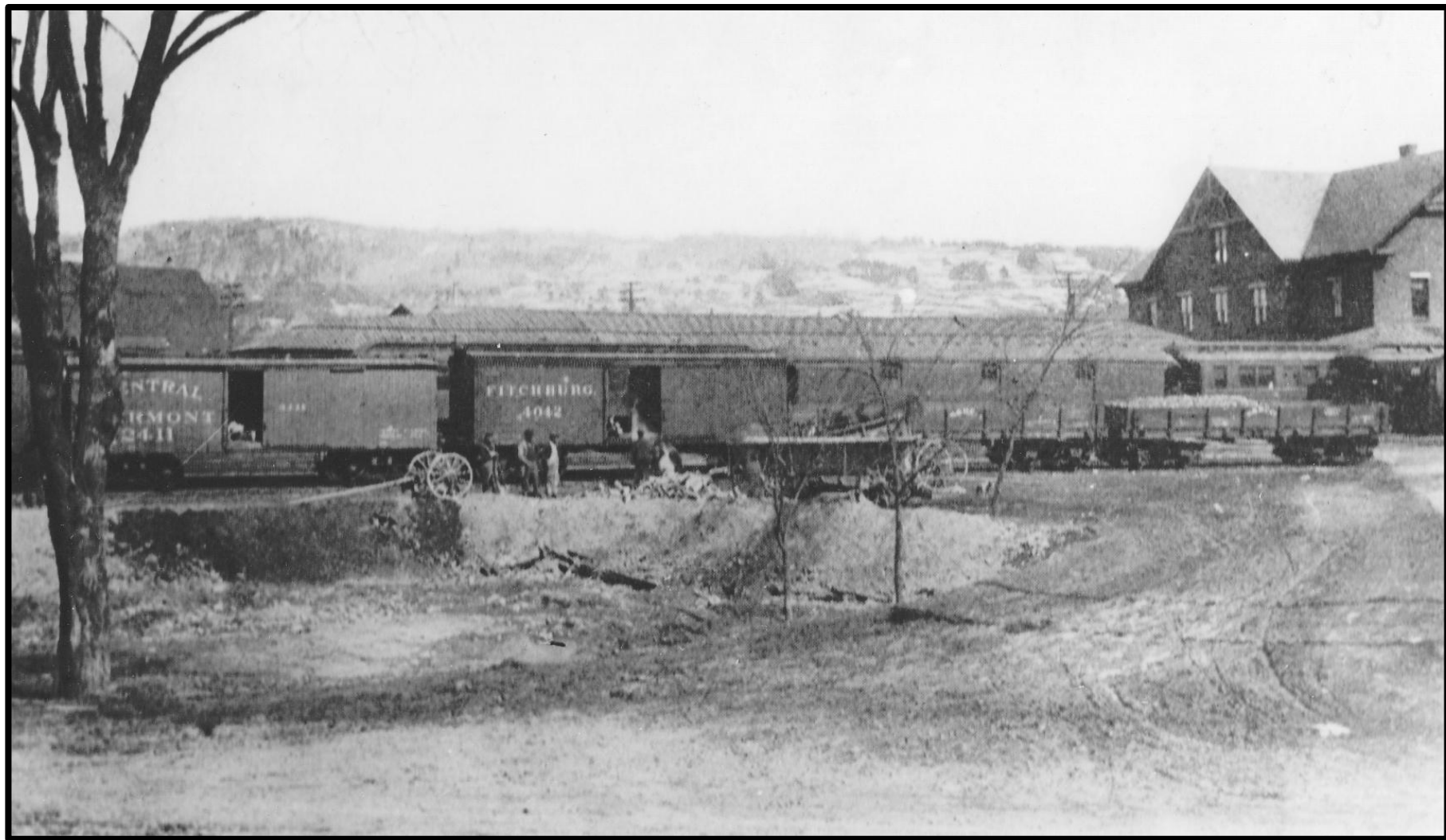




In 1871 E. K. Smith & Son of Hanover, NH relocated their business to WRJ to be near the rails and built this new brick facility.



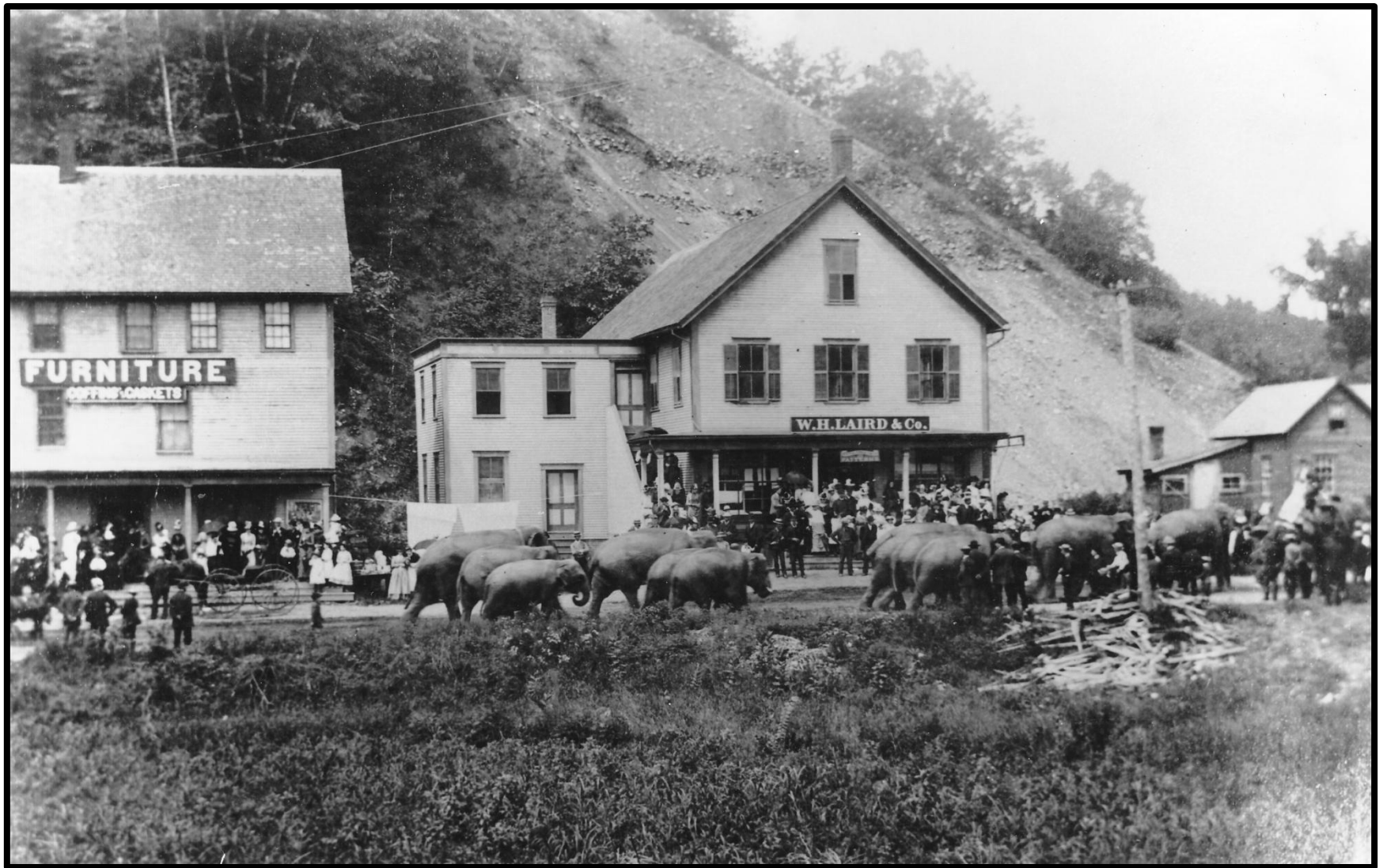
In August 1878 the original Junction House was destroyed by fire and a second very fashionable hotel was erected on the site completed in 1879.



The view from the Junction House towards the railroad station across a public dump circa 1880.

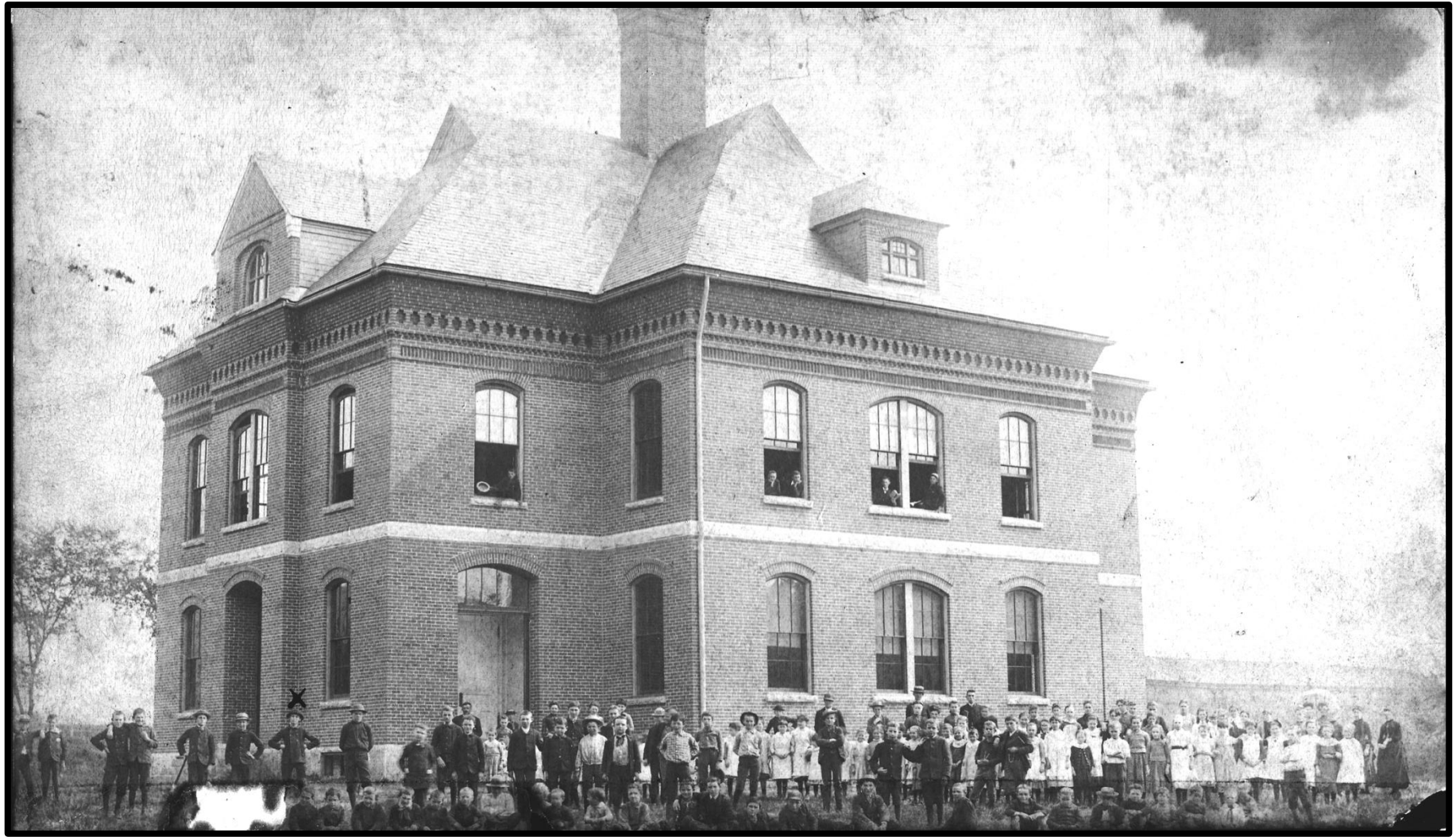


By 1880 Gates Street was developing with livery stables, a new Methodist church, and several new residences.

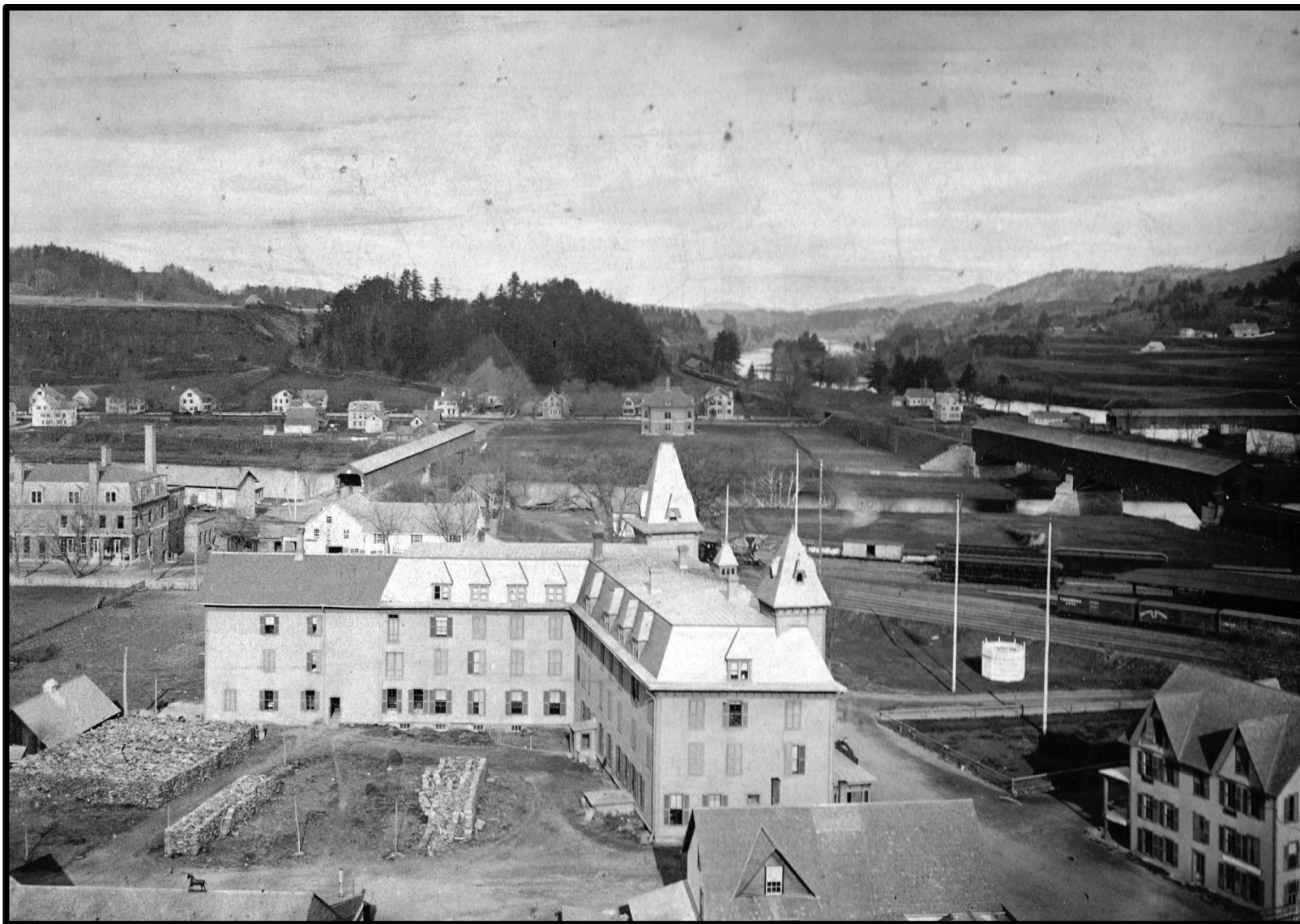


-August 8, 1882-

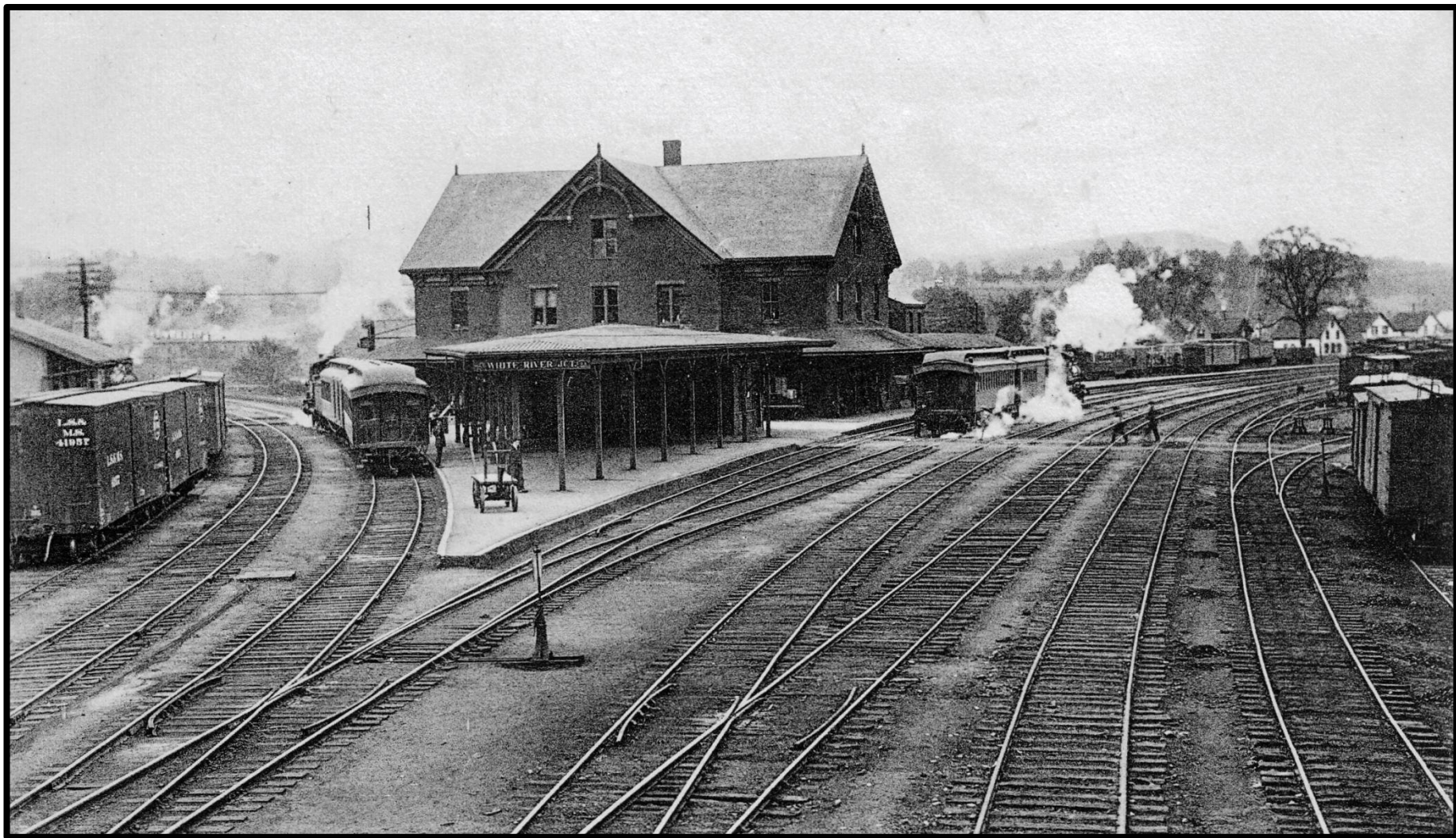
***The day that the Barnum & Bailey Circus came by railroad to
White River Junction.***



Due to the continued growth of White River Junction, in 1884 the town of Harford erected a new schoolhouse to serve the village's youngsters.



***White River Junction , Vermont
Circa 1885
Looking Northeast***



***White River Junction, Vermont
Union Station looking south circa 1895.
Left is to Concord, NH – Right is to Springfield, MA***

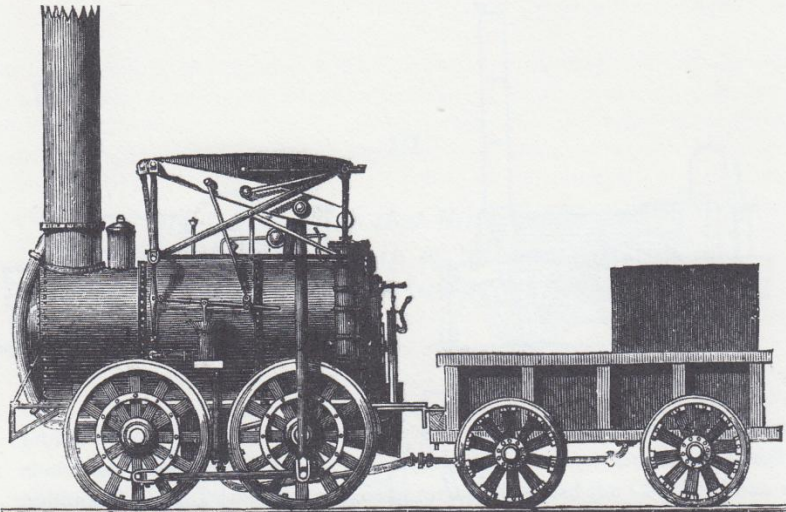
PART IV

Early Steam Power and Operations into White River Junction

First British Steam Locomotives Imported to America in 1829 by the Delaware & Hudson Canal Company

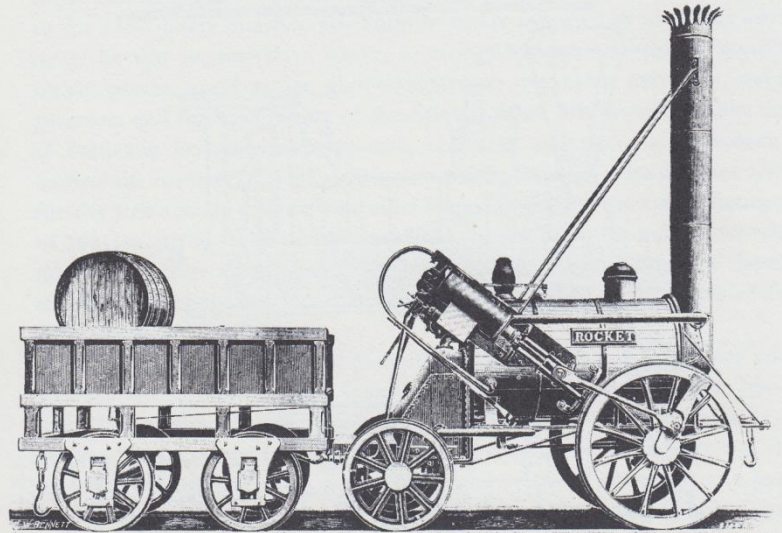
“Stourbridge Lion”

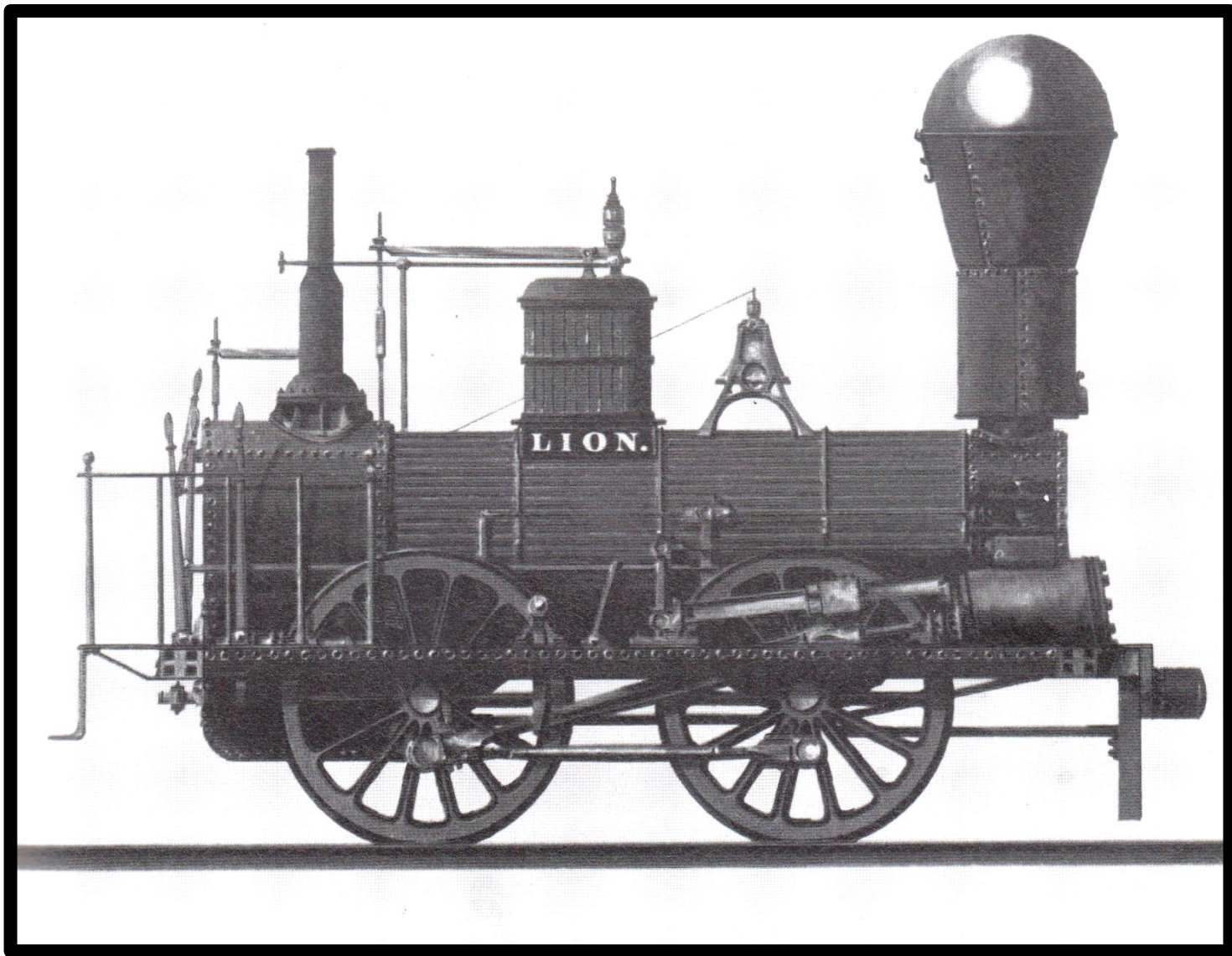
Designed by
George Stephenson



“Rocket”

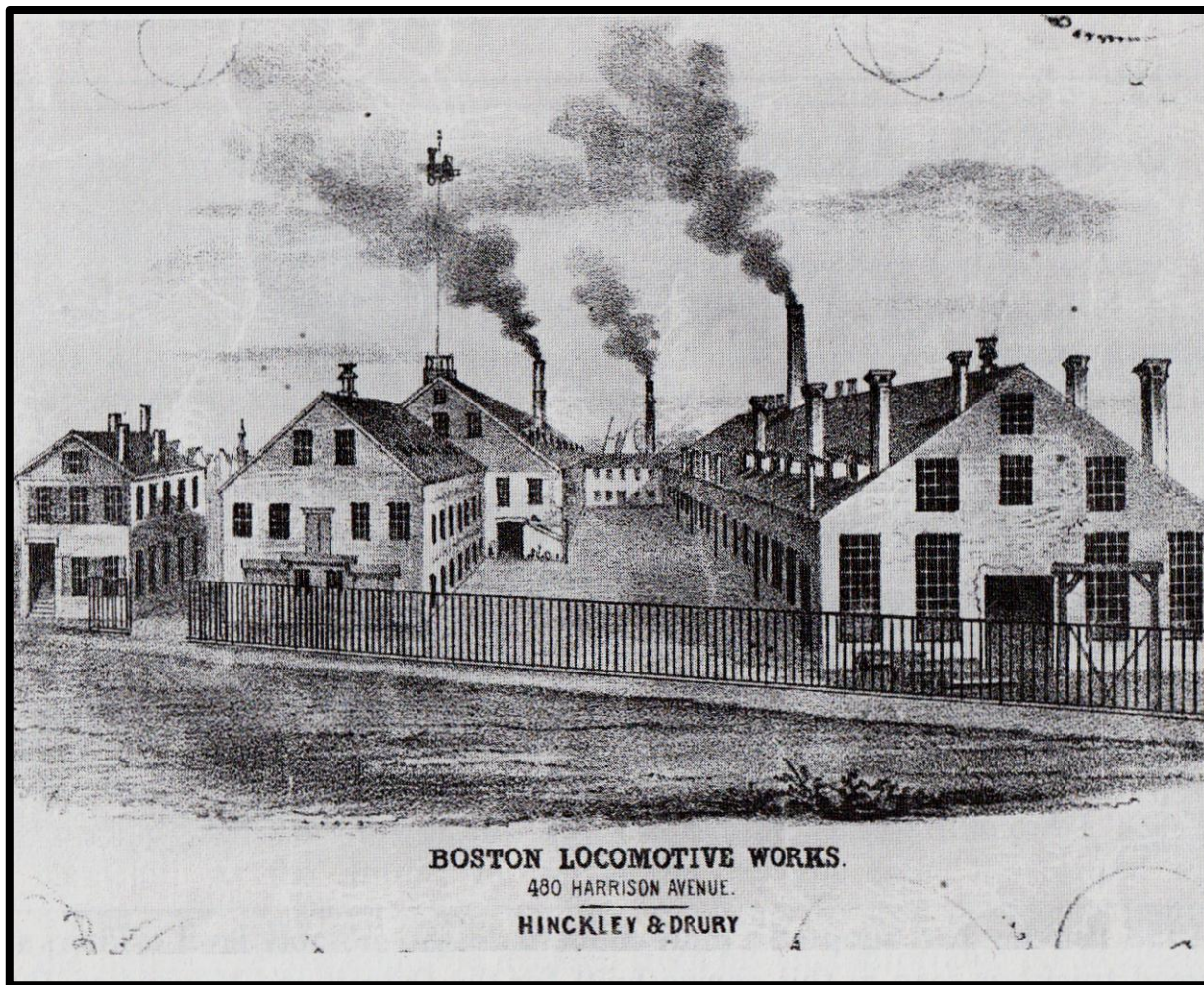
Designed by
John Rastrick





"LION"

***The first locomotive on the Nashua & Lowell Railroad
Circa 1836***

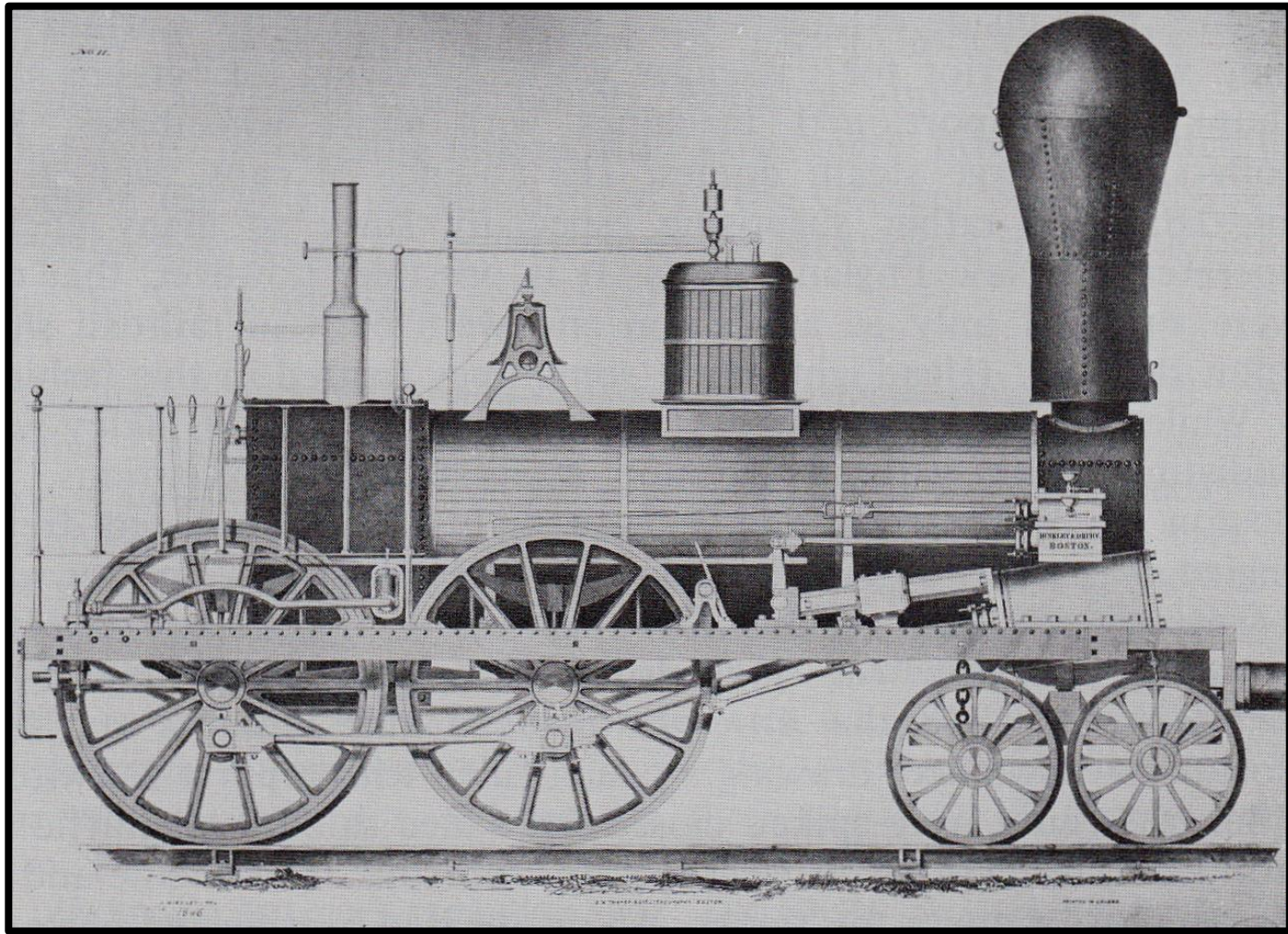


Hinkley & Drury

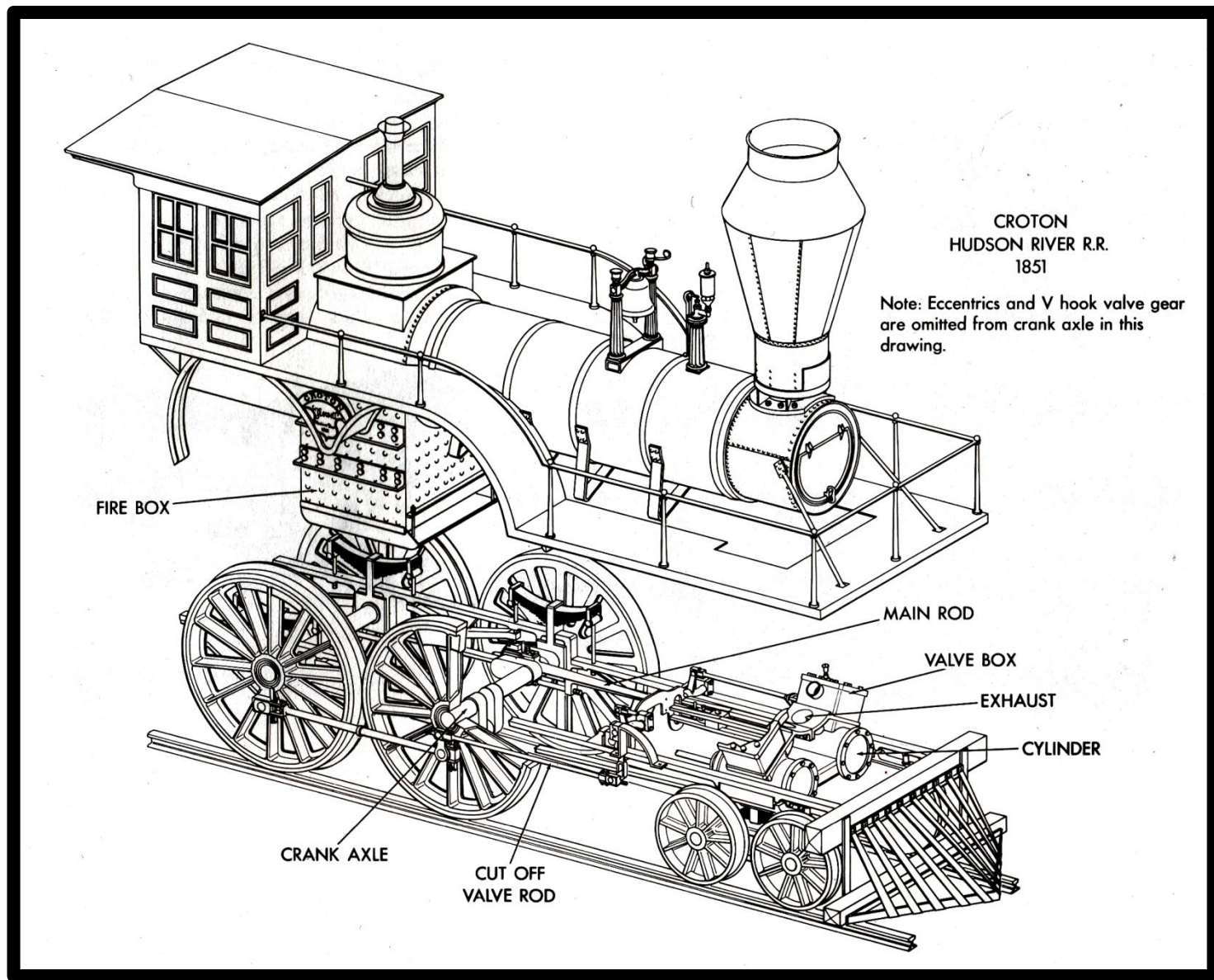
Boston Locomotive Works as it appeared in 1852

Boston, Massachusetts

Produced their first locomotive in 1840



***A standard Hinkley & Drury locomotive design of 1846
Utilizing the 4-4-0 wheel layout – the “American” type
locomotive***



***The major component parts of an early New England
4-4-0 wood burning steam locomotive Circa 1850***

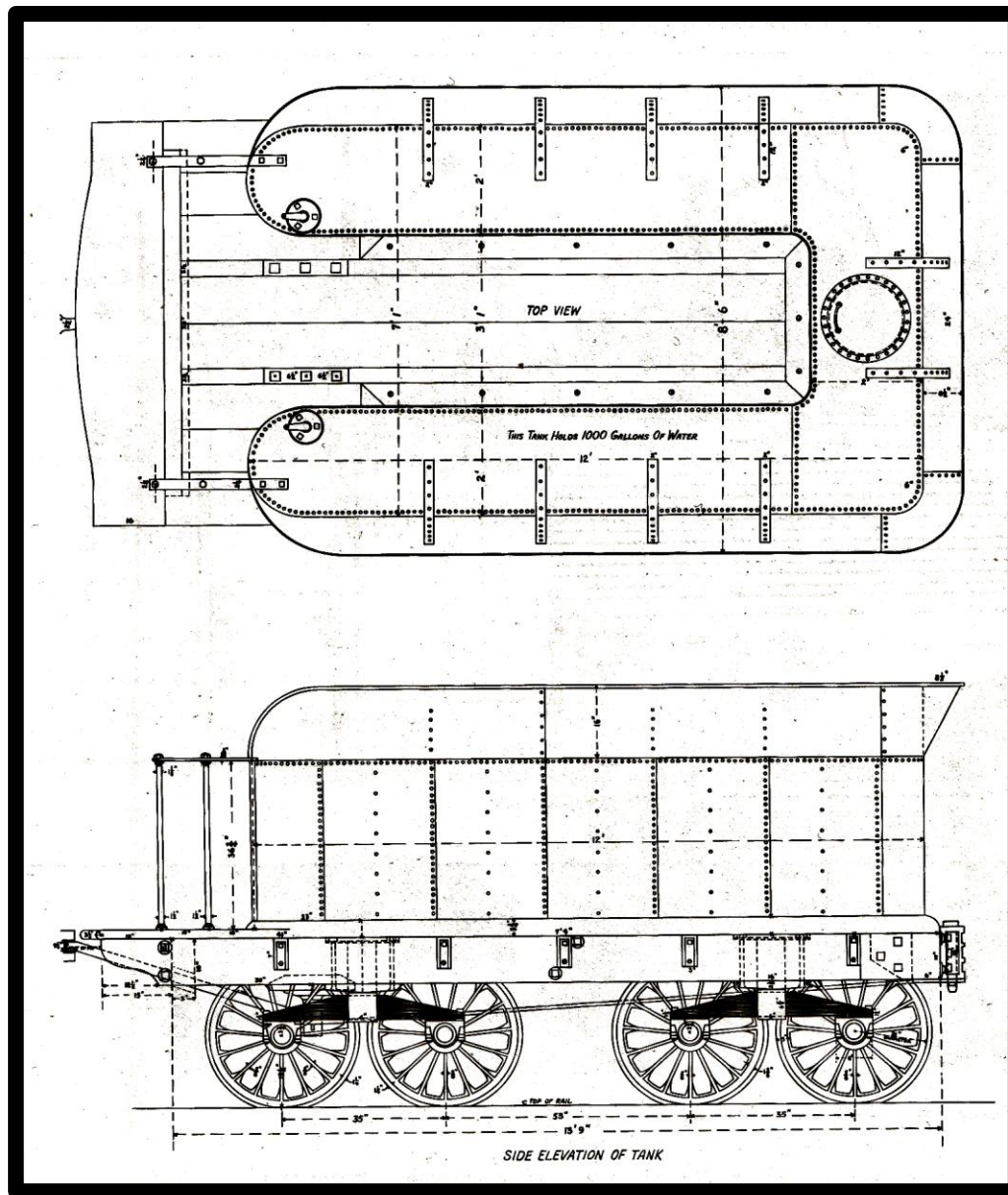
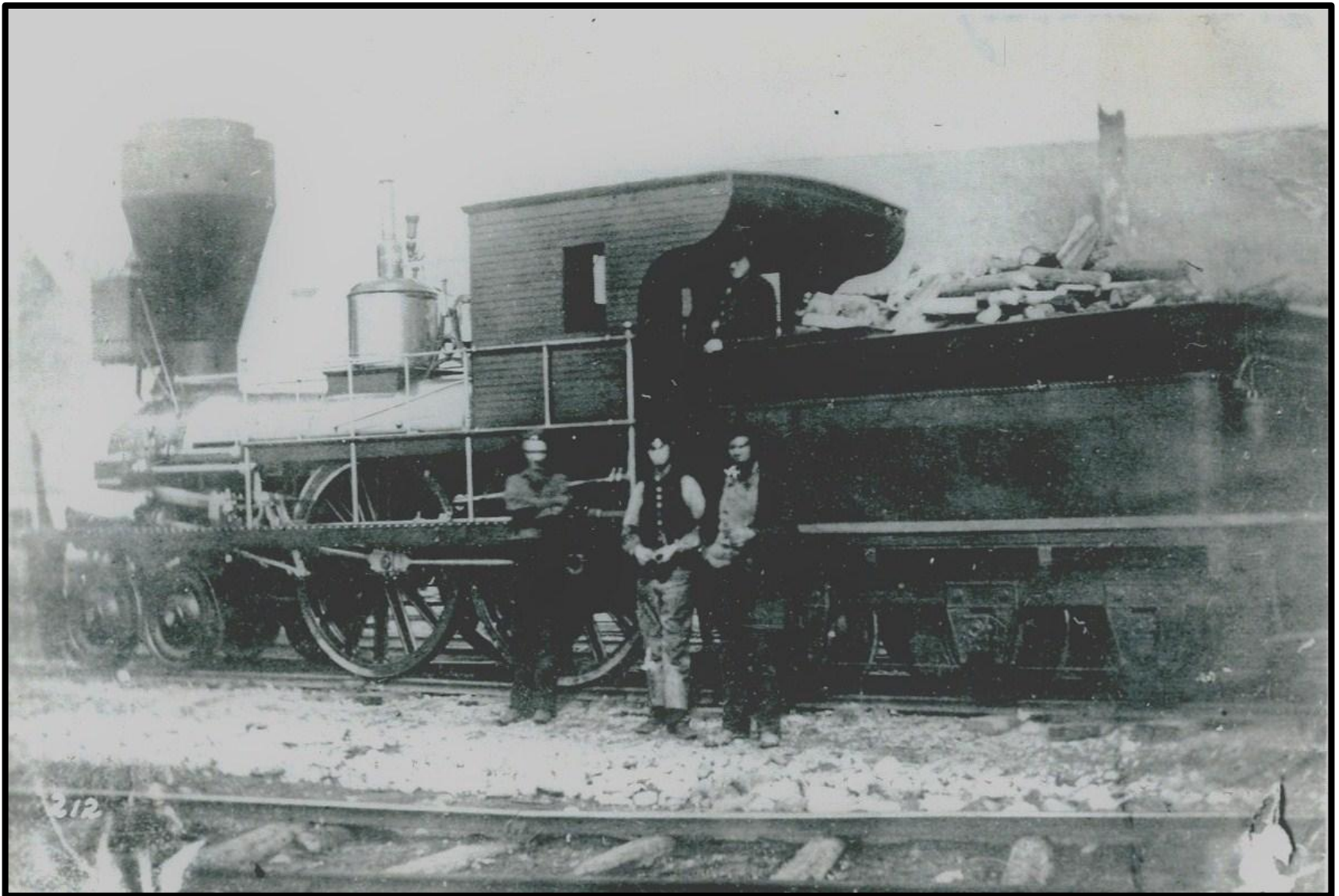


Diagram of a late 1840's locomotive tender



"BRATTLEBORO"

Built by Hinkley & Drury January 22, 1847

Connecticut River Railroad



Vermont Central Railroad's "WINOOSKI"
Pulled the first train to run in Vermont
June 26, 1848 - White River Junction to Bethel
Photograph taken mid – 1870's

The Northern Railroad of New Hampshire's locomotive **"WILLIAM AMORY"** circa 1850



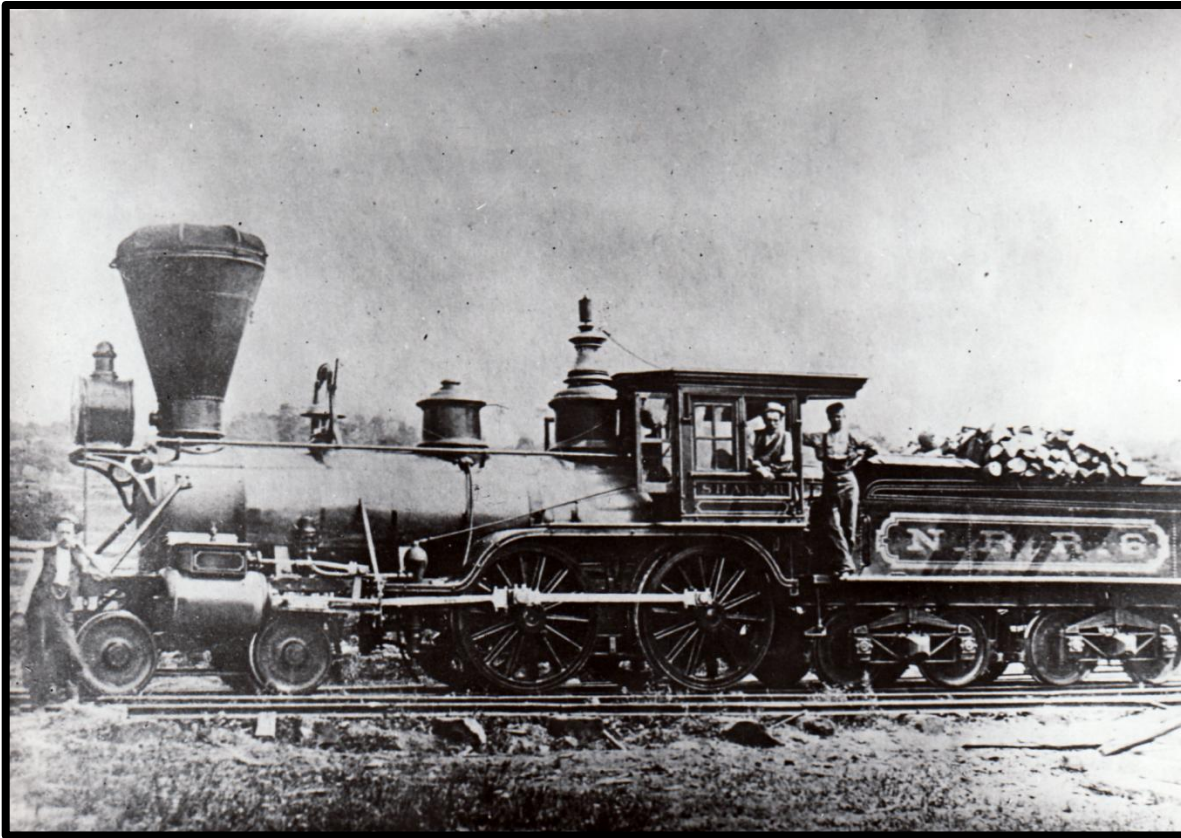
Typical Early Train Size

- ***6 Passenger cars***
or
- ***15 Freight cars***

Typical Train Crew Size

- ***Conductor***
- ***Engine man***
- ***Fireman***
- ***Brake man (probably several brakemen)***

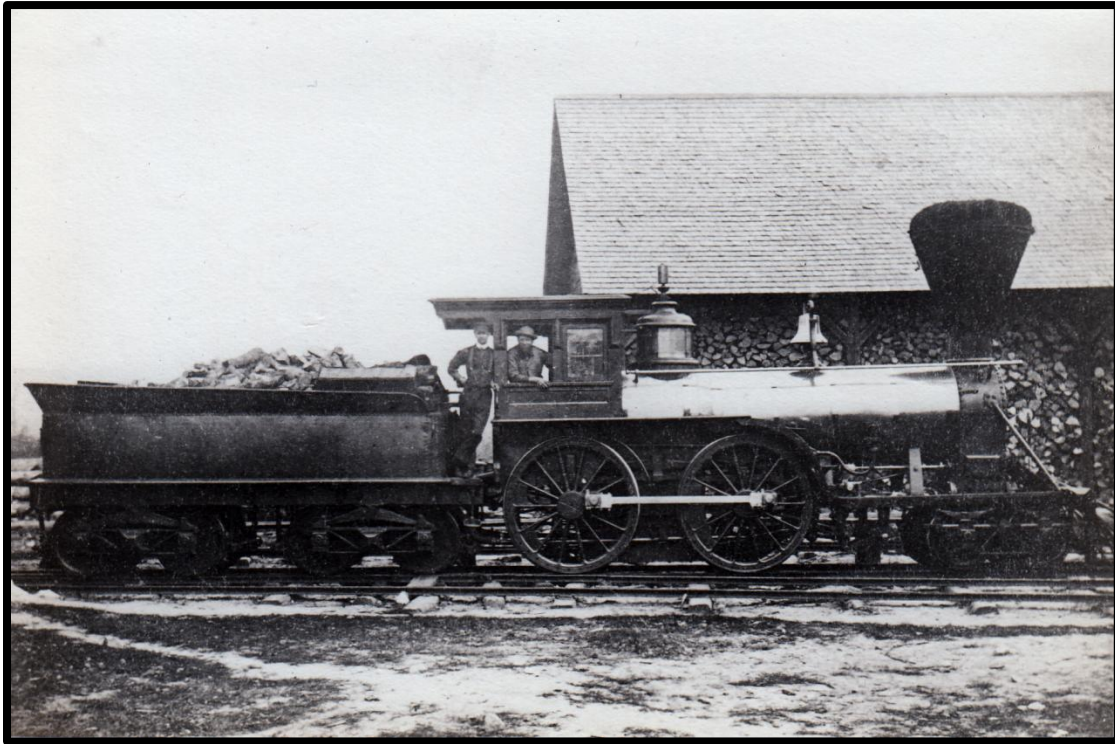
The Northern Railroad of New Hampshire's Freight Locomotive "SHAKER" circa 1850



A typical locomotive of this design

- ***Weighed about 20 to 25 tons;***
- ***Produced about 325 horse power at 25 MPH;***
- ***Comfortably traveled at about 25 to 30 miles per hour.***
- ***Top speed 40 – 45 mph w/120 tons.***

The Northern Railroad of New Hampshire's Locomotive "GRAFTON" at a Wood Shed circa 1850's



*A typical locomotive of
this size consumed in
25 miles about*

- *1 cord of wood*
- *1,000 gallons of water*

*A typical tender held
about*

- *2 1/2 Cords of wood*
- *1,500 gallons of water.*

Northern Railroad of New Hampshire

1850

Concord to White River Junction

69.26 Miles

20 stations including stations at Concord and WRJ

19 Wood Sheds

9 Water Stations

.....

**In 1850 NRR 12 Locomotives ran a total of 189,155 miles
and consumed 8,158 cords of wood at a cost of \$21,072
= 23 miles to a cord of wood.**

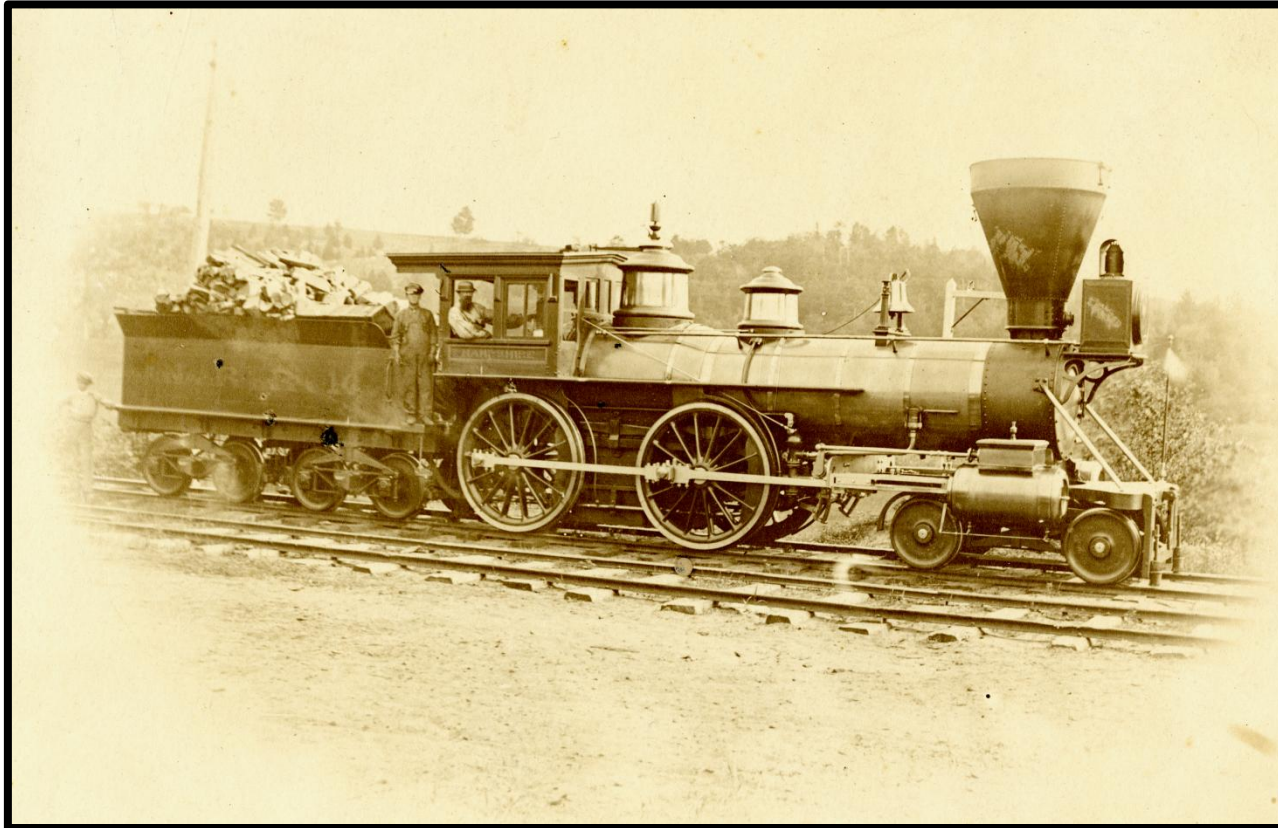


***Depot and Water Station
South Danbury, new Hampshire
Northern railroad of New Hampshire***



***11 cords of fuel wood headed to the Cheshire Railroad
Keene, New Hampshire 1878***

***The Northern Railroad of New Hampshire's Freight
Locomotive "HAMPSHIRE"
Built by Hinkley & Drury September 1847***



***The cost of a
wood burning
steam
locomotive with
the tender was
approximately
\$7,500 to
\$8,500.***

Hampshire

***Cost \$8,500;
Rebuilt in 1850***



***The Northern Railroad of New Hampshire's freight locomotive "**LEBANON**" after being rebuilt in 1864
Originally built by Hinkley & Drury December 30, 1847***



“WESTMINSTER”

Vermont Valley Railroad

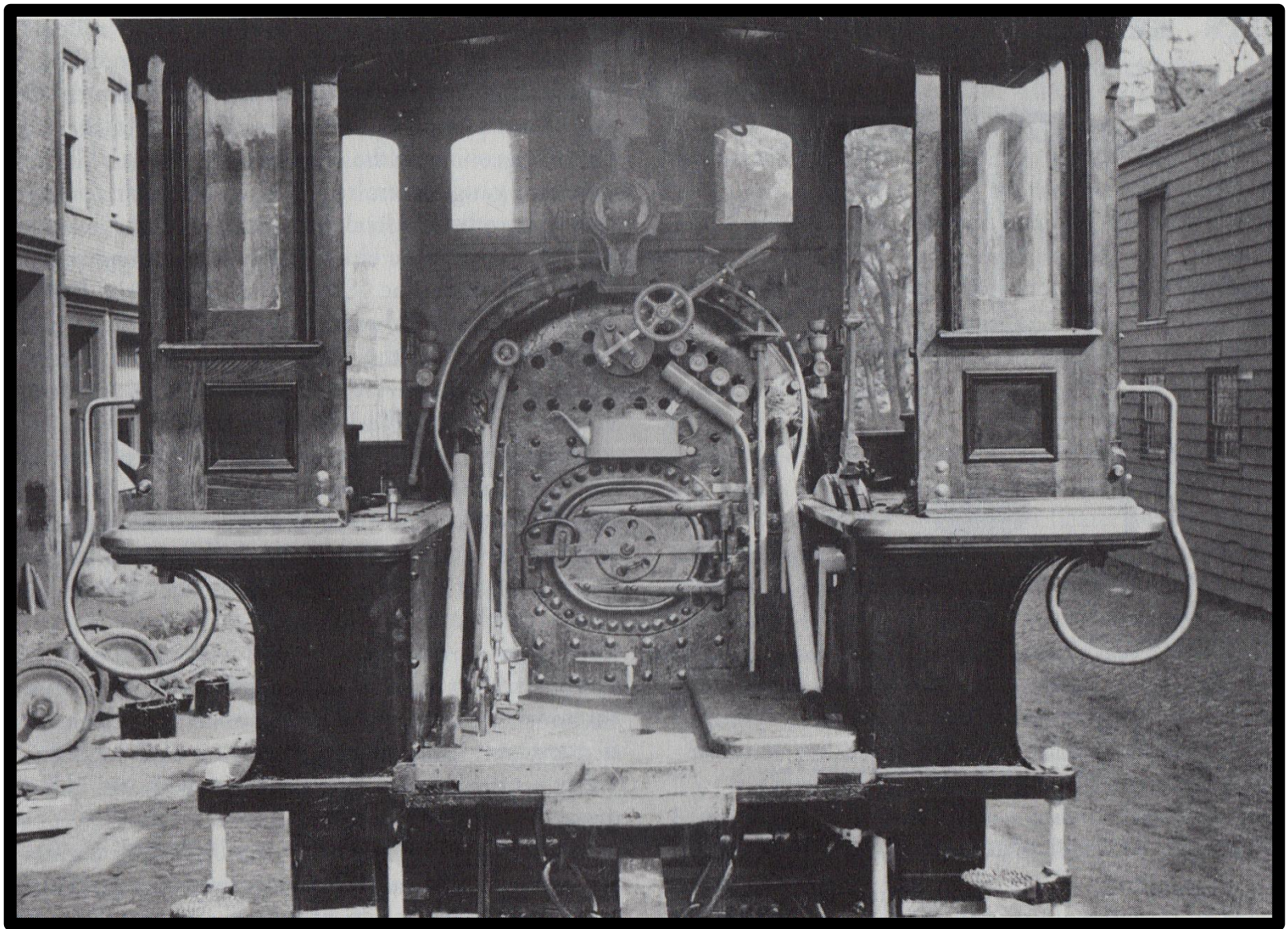
Built in 1851 by Rogers Locomotive Company; Paterson, NJ



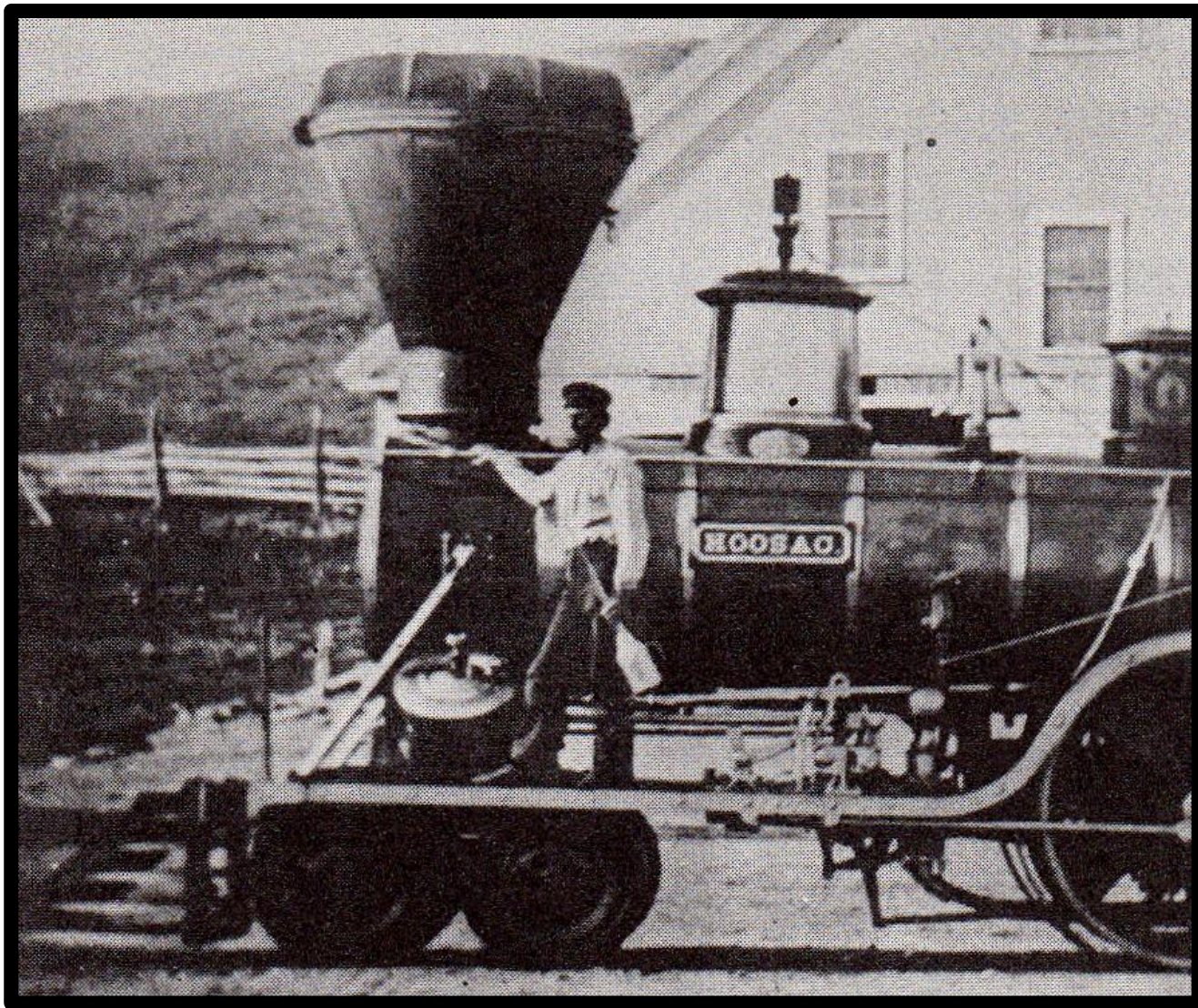
***Very early highway warning sign
Near Montpelier, Vermont
Vermont Central Railroad***



***A first generation “Engine Man”
Circa 1855***



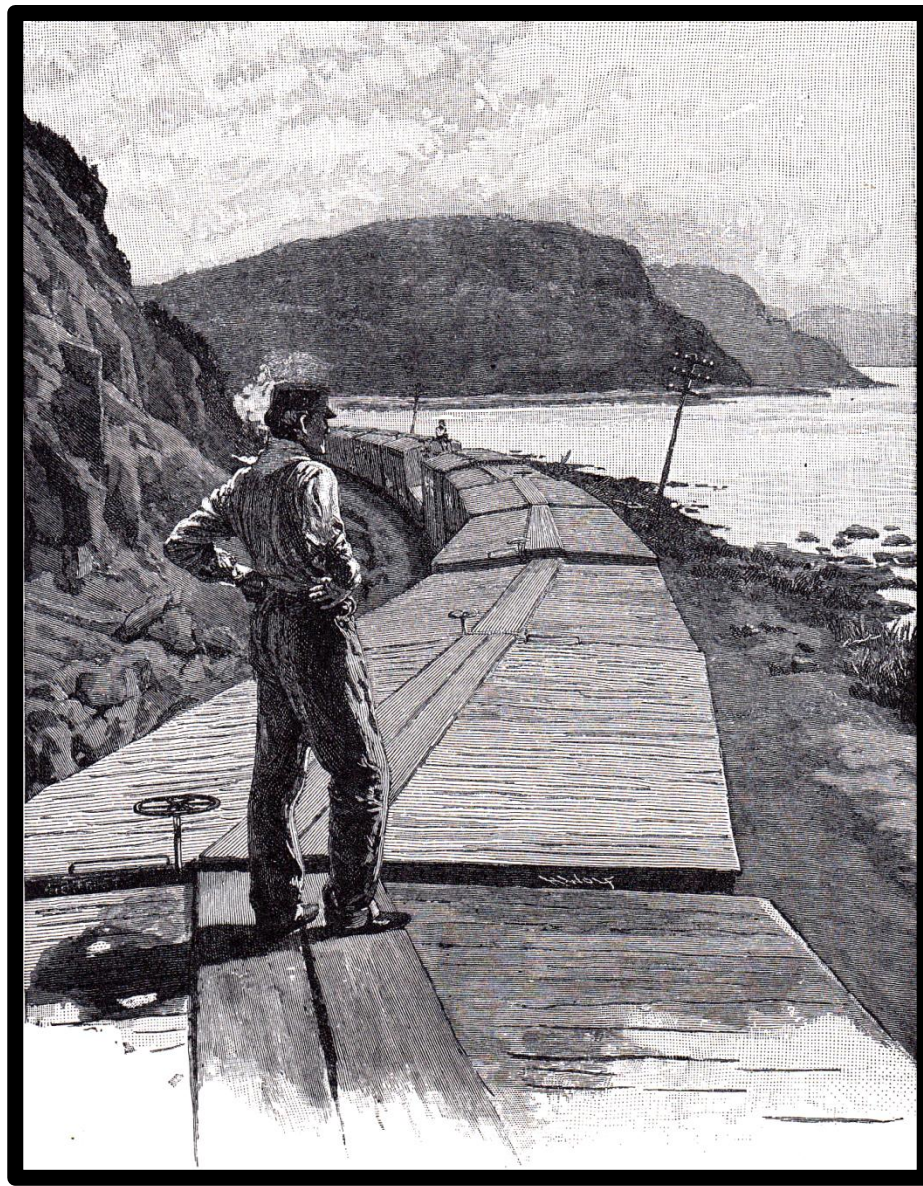
***Cab view of an early wood burning steam locomotive
Fireman sat left – Engineer sat right***



A “Tallow Pot” (slang for a locomotive fireman) preparing to lubricate the steam cylinder valves – necessary about every 25 miles of running



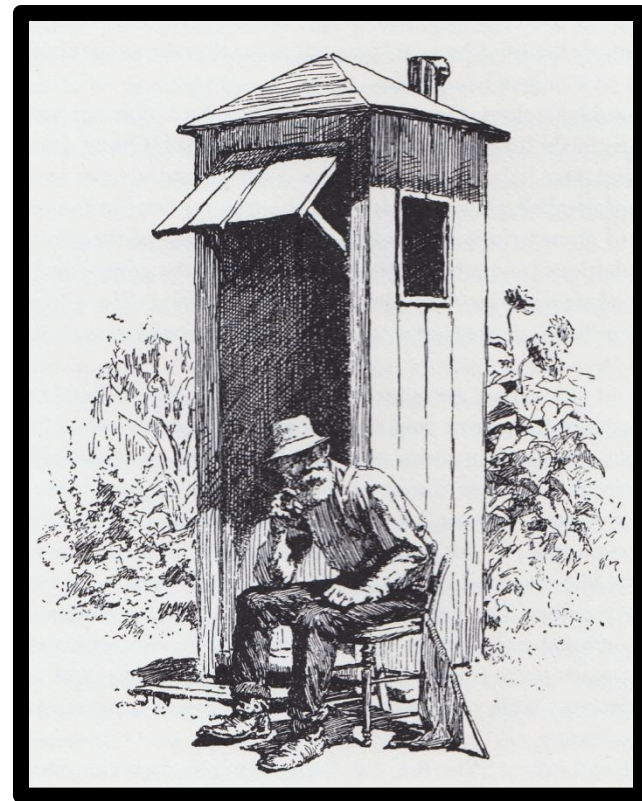
The dangers of early couplers.



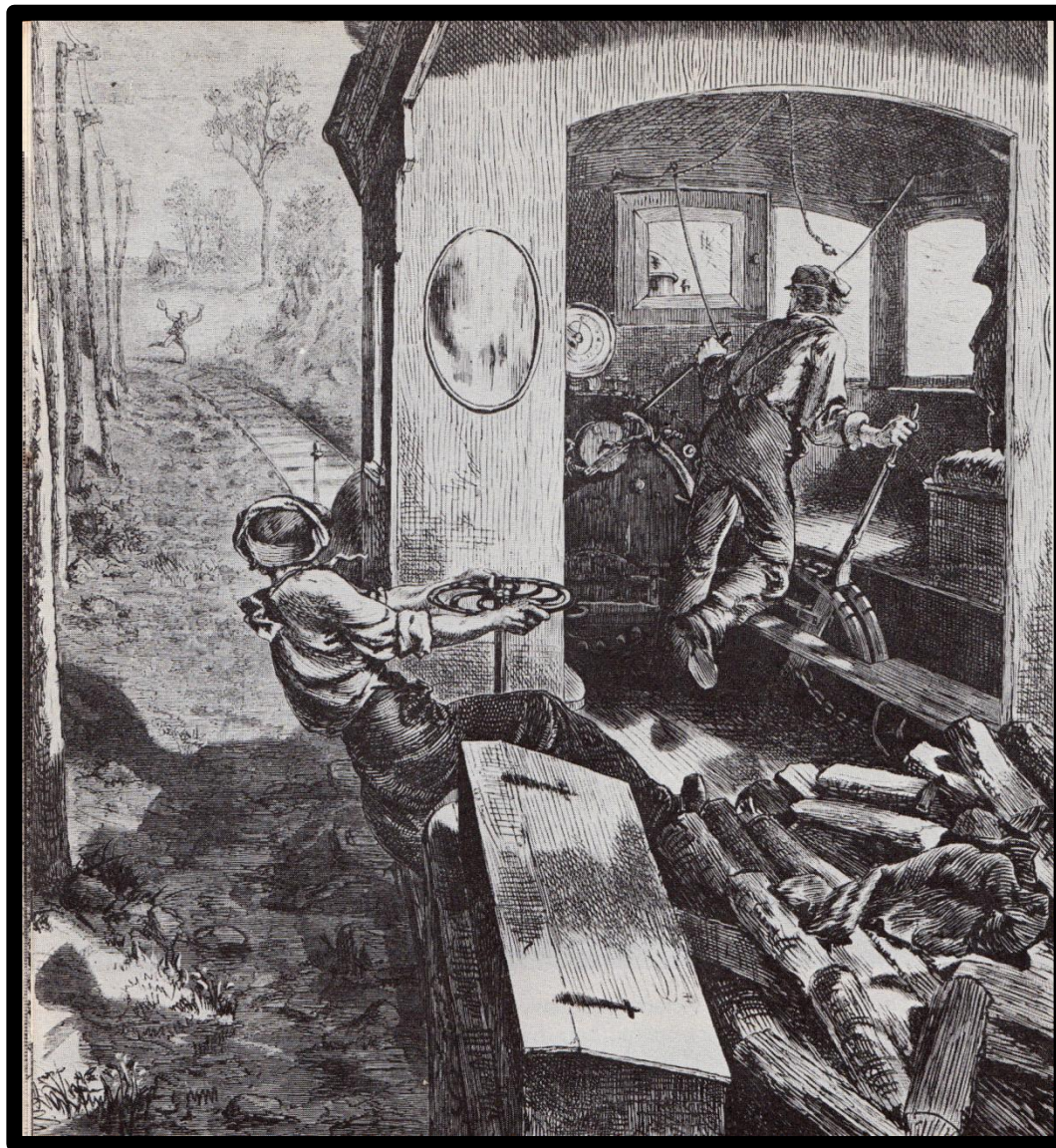
The pleasures of being a brakeman on a nice summer day.



The perils of being a railroad brakeman in a winter storm.



*The Northern Railroad's Locomotive **"GENERAL PIERCE"**
At the junction of the Bristol Branch above Franklin, NH
Circa 1855*



The unexpected moments of early railroading prior to the use of the telegraph starting in 1862.



An early track walker on a stormy night.



***Early track maintenance workers at Fairlee, VT.
A Section Crew***

Part IV

- 1848 -

***An Upper Valley Transportation
Revolution and a New Way of Life***

An Immediate Revolution in Transporting People and Freight

***A Concord Coach and stage line
Southern New Hampshire***

Circa 1840



***An early passenger train south of
White River Junction, VT***

Circa 1850



A Comparison of Travel Coaches

***A Concord Coach
Manufactured by
J.S. & E. A. Abbot
Concord, N.H.
Circa 1850***

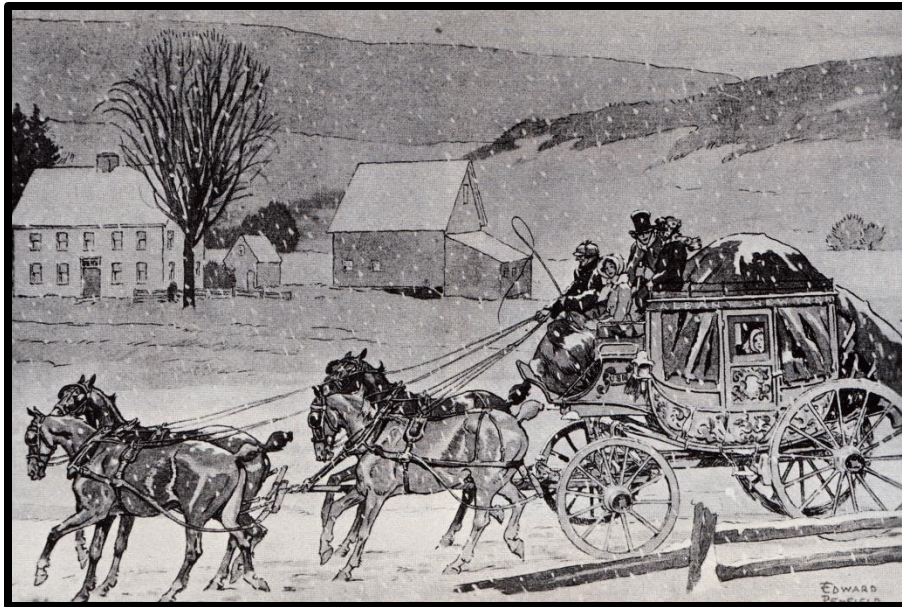


***Typical railroad coach
Circa 1852
Cast iron and wood chassis frame
with a
wood framed and paneled body***



A Comparison in Traveling Comfort

***The Albany to Newburg Stage
Early Nineteenth century***



***Interior view of an early
American railway car.
The Illustrated London News
April 1852***



Railroads: **An Immediate Revolution in the** **Transportation of Freight**

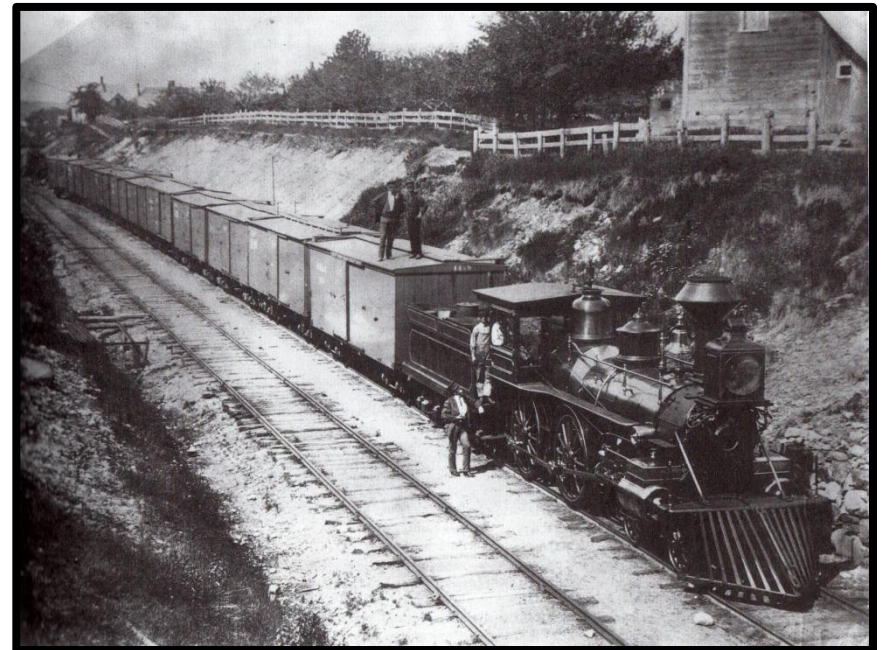
Mid-Century Individual **Teamster**

***Oxen were slower than horses
but had greater stamina for
long distance hauling***



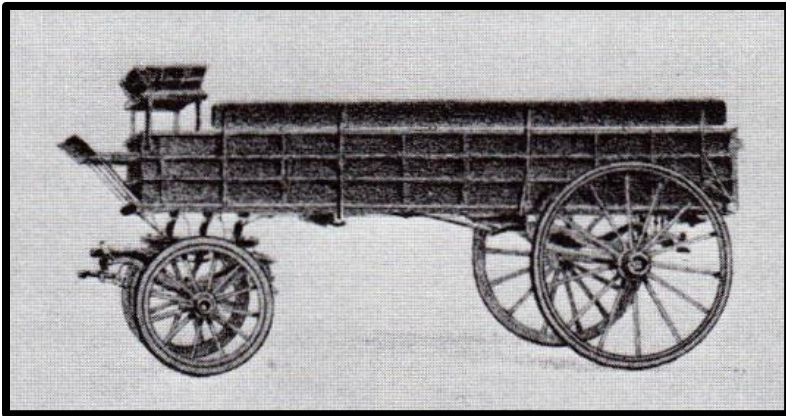
Freight Train in Lower New **England, circa 1865**

***A typical freight train was 15
to 20 cars at about 25 miles
per hour***

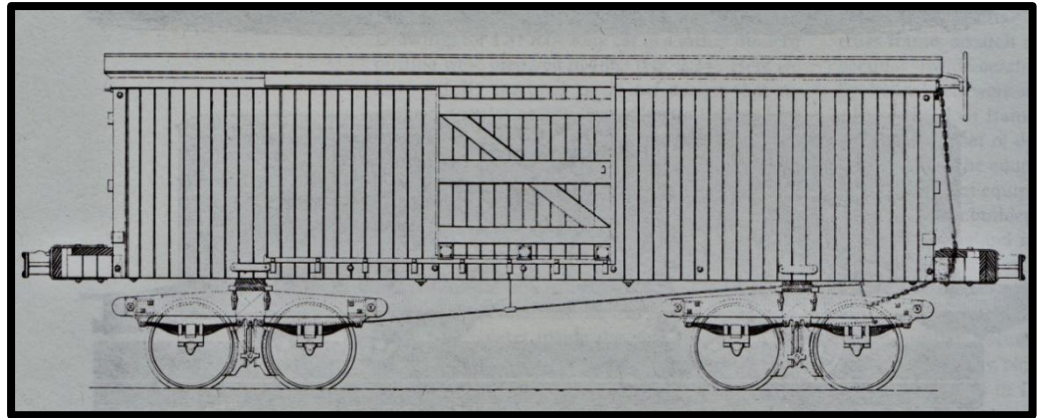


A Comparison of Freight Vehicles

***Large express wagon
manufactured by J.S. & E.A.
Abbot; Concord, NH
Circa 1850***



***Typical Box car
Circa 1855.
Cast iron and wood chassis frame
with
a wood framed and clad body.***



Pre-Railroad Moving Freight on the **Connecticut River** **1810 - 1850**

***A typical Connecticut River
flat boat with freight***



Canal locks at Olcott



Pre-Railroad
Tavern complex in Hartford Village on the
White River Turnpike

***The horse stable and
stable yard***



The tavern



Established taverns and inns on the turnpikes
were suddenly bypassed by the railroads

Fox's Stand Tavern;

North Royalton, Vermont

Built in 1818

The VCR bypassed it in 1848



Longmeadow Inn

East Ryegate, Vermont

Built in 1832

The C&PRR bypassed it in 1849





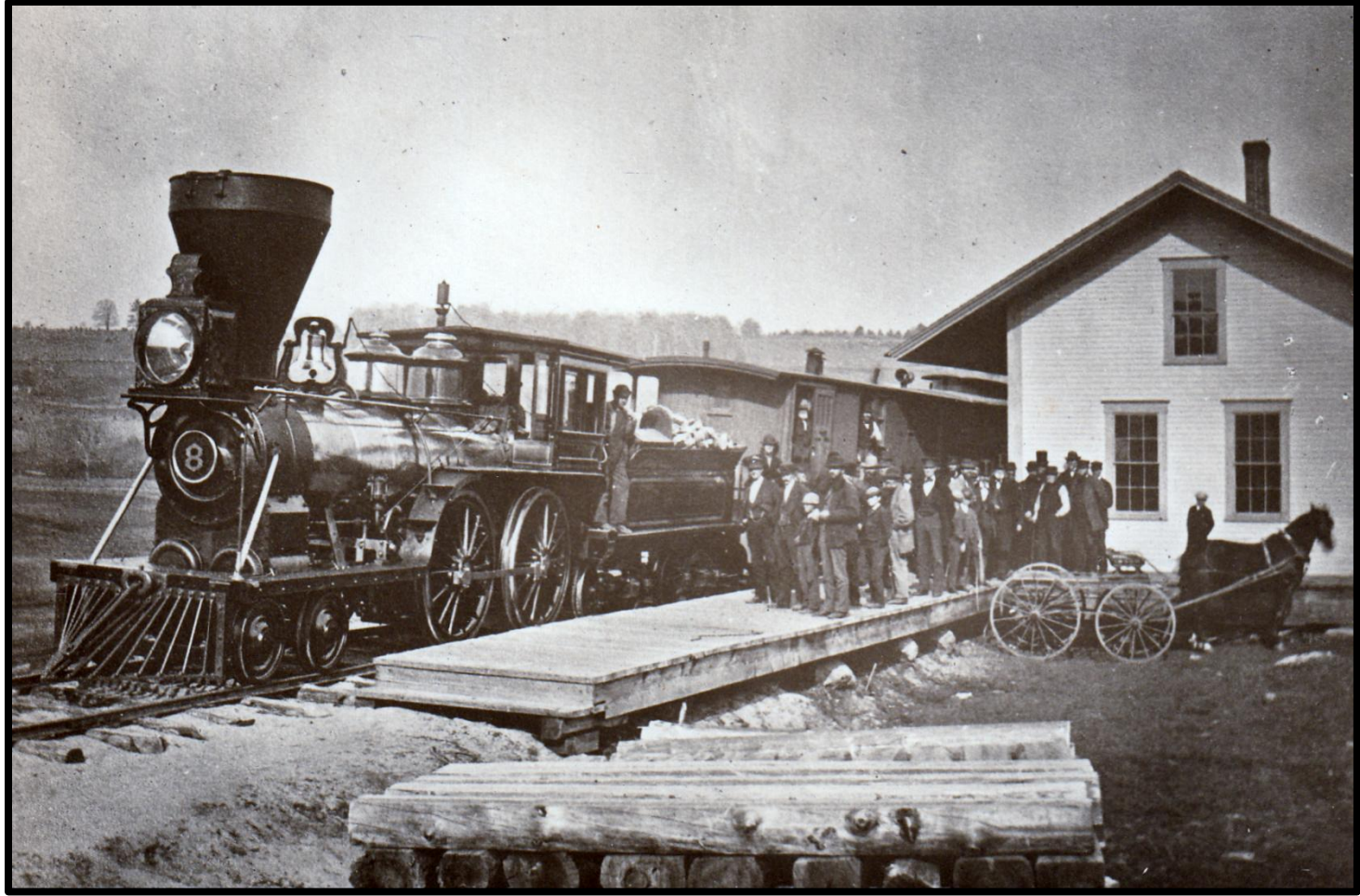
Swan's Union House Tavern

***An early "waggoners" tavern on the main route from
northern Vermont to Boston – NH Route 25 Haverhill, NH***



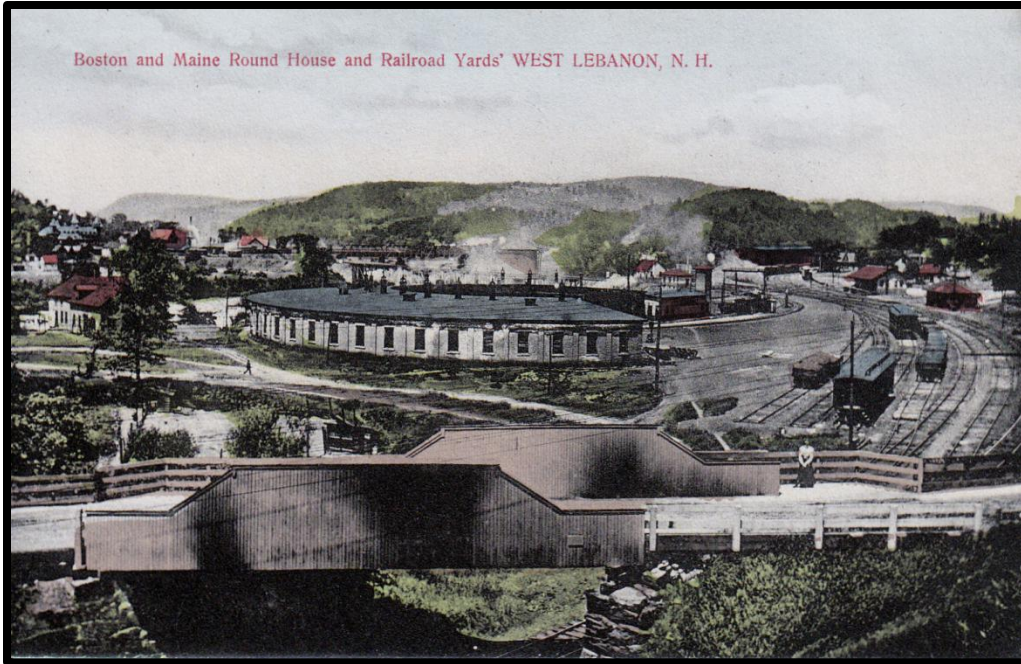
***An early drover's tavern on the main route from northern
Vermont to Boston
NH Route 25 Haverhill, NH***

The Railroads Standardized and Re-Organized Time



***Train Time at Grafton, New Hampshire.
The Northern Railroad of New Hampshire Circa 1850.***

The Railroads Were the Upper Valley's First Major Industry



West Lebanon Railroad Yard

Circa 1900

***Developed by the Northern Railroad
of New Hampshire in 1848 - 49***

West Lebanon Facilities

1850

- ***Stone Engine House***
 - 16 Stalls
 - 130 Feet in Diameter
- ***Turntable 40 ' in Dia.***
- ***Repair Shop 50' X 80'***
- ***Car House 44' X 115'***
- ***Wood Shed 40' X 160'***
- ***Water Station***
- ***Passenger Station***
- ***Freight House ,40' X 60'***
- ***4 blocks of 8 Tenements***

Northern Railroad of New Hampshire

1850 Pay Scales at West Lebanon

Train Crews

- **Engine Man:** **\$2.25 / Day = \$700. / Year**
- **Fire Man:** **\$1.25 / Day = \$390. / Year**
- **Brake Man:** **\$1.50 / Day = \$420. / Year**
- **Freight Train Conductor:** **\$550. / Year**
- **Passenger Train Conductor:** **\$500. / Year**

***Assumes a 6 day work week**

Northern Railroad of New Hampshire

1850 Pay Scales at West Lebanon

Station and Repair Shop Positions

- **Station / Freight Agent:** **\$550. Year**
- **Shop Superintendent:** **\$1,200. Year**
- **Blacksmith:** **\$546. Year**
- **Machinist:** **\$468. Year**
- **Shop Foreman:** **\$375. Year**
- **Shop Laborer:** **\$300. Year**
- ***Assumes a 6 day Week**

Northern Railroad of New Hampshire

1850 Pay Scales at West Lebanon

Other positions

- ***Switch & Watchman:*** ***\$1.25 / Day***
- ***Wood Handler:*** ***\$1.00 / Day***
- ***Trackman (Laborer):*** ***\$1.00 / Day***
- ***Bridge Repair Laborer:*** ***\$1.50 / Day***

Consider the Following:

- ***In 1851 NY eliminated tolls paid to the Erie Canal by NY railroad companies.***
- ***In 1853 10 independent railroads between Albany and Buffalo, NY were consolidated to form the New York Central Railroad Company.***
- ***Control of the NYCRR could have been bought for about \$9 million dollars circa 1860 (\$260 million +/- in 2014).***
- ***In 1867 Cornelius Vanderbilt acquired control of the NYCRR – and the rest is history.***

A Final Question

“Boston Interests” had spent about twice as much money on the “Northwest Passage” from 1830 to 1850.

What if “Boston Interests” had acquired the NYCRR instead of Cornelius Vanderbilt?

Was this New England’s big missed opportunity?



THE END