Wednesday
October 24, 2018

Replacing the Rexford Bridge --

the site, the history, and the bridges.

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NEW YORK STATE OF OPPORTUNITY. Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

Rexford Bridge Project

- Site History
  - Erie Canal in the Schenectady/Rexford Area
  - Rexford Aqueducts
  - Rexford Bridges
- Replacing the Rexford Bridge
  - Project Objectives
  - Project Challenges
  - Project Construction
    - Bridge
    - Roadway & Roundabout
- Questions


7
3
2
4
130 miles
1
2 hours
5
6
9
8
11
10

Clifton Park

Schenectady

Troy

Albany

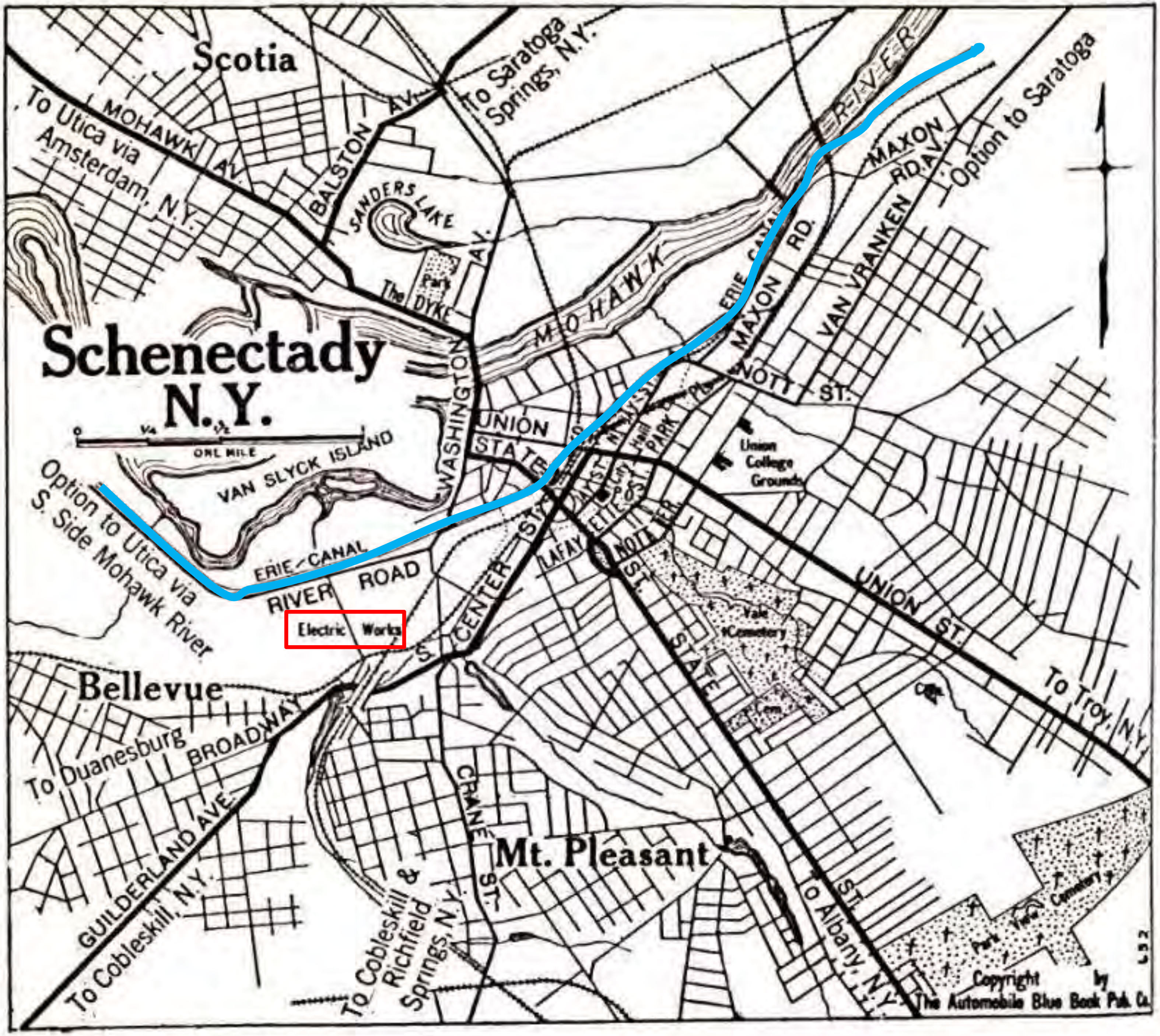

AQUEDUCT, 1842
SECOND AQUEDUCT ERECTED ON SITE TO CARRY ERIE CANAL ACROSS MOHAWK RIVER. NEARBY ARE LOCKS 21 AND 22 AND A FORMER CANAL STORE.
CLIFTON PARK BICENTENNIAL COMM.

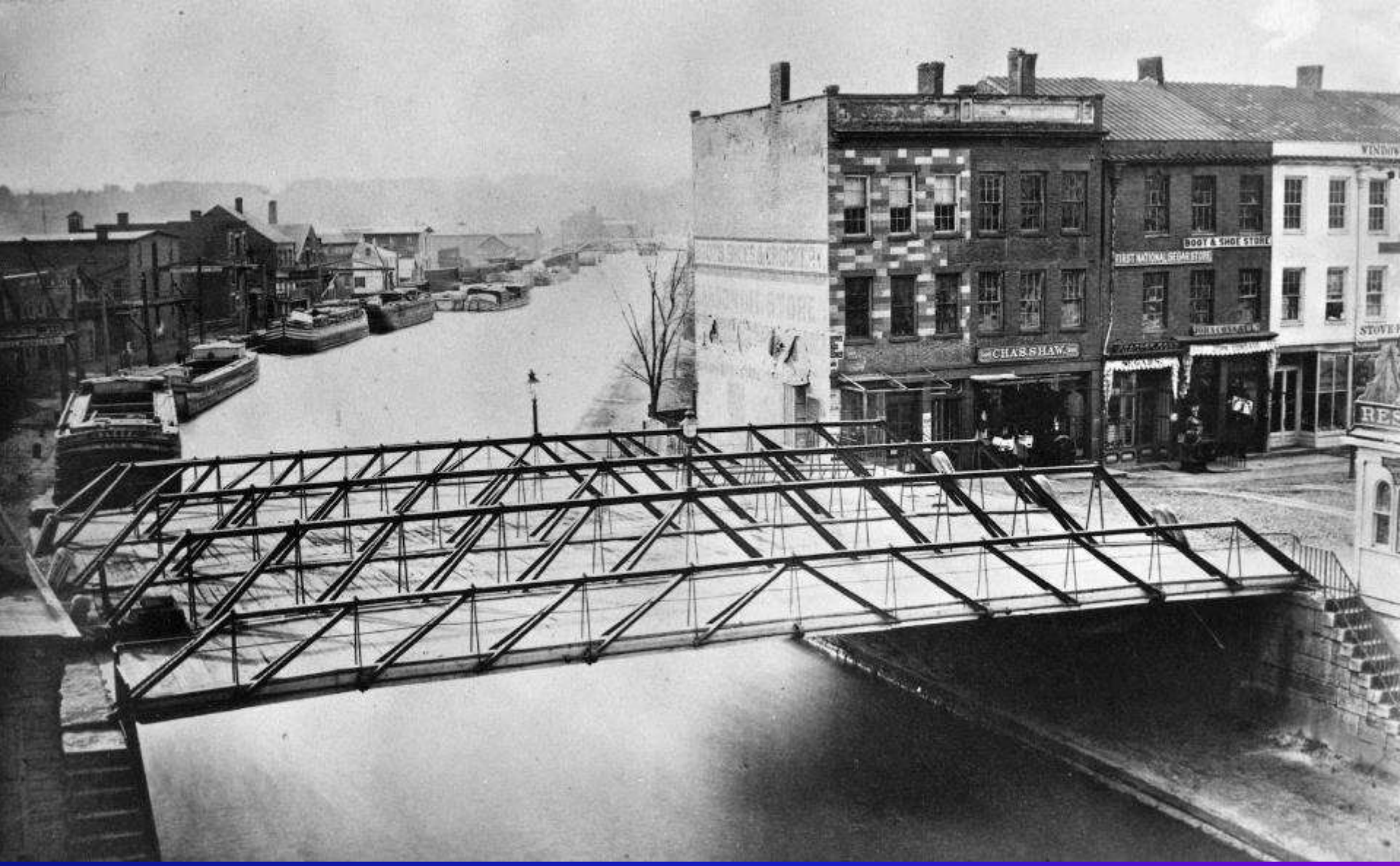
Erie Canal

- Original Erie Canal
  - Work began 1817, fully opened 1825
  - Ran 363 miles from Buffalo to Albany
  - Was a dug canal, did not use rivers
  - Was 4 feet deep, 40 feet wide
  - Had 83 locks and 18 aqueducts

Erie Canal

- Enlarged Erie Canal
  - Between 1836 an[illegible] Erie Canal was enlarged
  - To 7 feet deep,
  - Locks were red[illegible]o 72
  - Rexford Aqueduct [illegible] from the Enlarged Canal
- Barge Canal fully opened in 1918


Scotia
To Saratoga Springs, N.Y.
To Utica via Amsterdam, N.Y.
MOHAWK AV.
BALSTON AV.
SANDERS LAKE
Park
The DYKE
AV.
MOHAWK RIVER
ERIE CANAL
MAXON RD.
MAXON RD. AV.
VAN VRANKEN
Option to Saratoga
Schenectady N.Y.
0 1/4 1/2 ONE MILE
VAN SLYCK ISLAND
WASHINGTON
UNION
STATE
NOTT ST.
PARK PL.
Union College Grounds
Option to Utica via S. Side Mohawk River
ERIE CANAL
RIVER ROAD
Electric Works
CENTER ST.
NOTT TER.
STATE
UNION ST.
Vale Cemetery
To Troy, N.Y.
Bellevue
To Duanesburg
BROADWAY
GUILDERLAND AVE.
To Cobleskill, N.Y.
To Cobleskill & Richfield Springs, N.Y.
CRANE ST.
Mt. Pleasant
To Albany, N.Y.
Park View Cemetery
Copyright by The Automobile Blue Book Pub. Co.


CHAS SHAW
BOOT & SHOE STORE


LAW OFFICES
HARRY G. COPLON

1947

NEW VERTICAL WALL AT ENTRANCE TO UPPER MOHAWK AQUEDUCT.


Erie Canal Schenectady N.Y.

SPOTLIGHT STORY

Uncovering Erie Canal walls

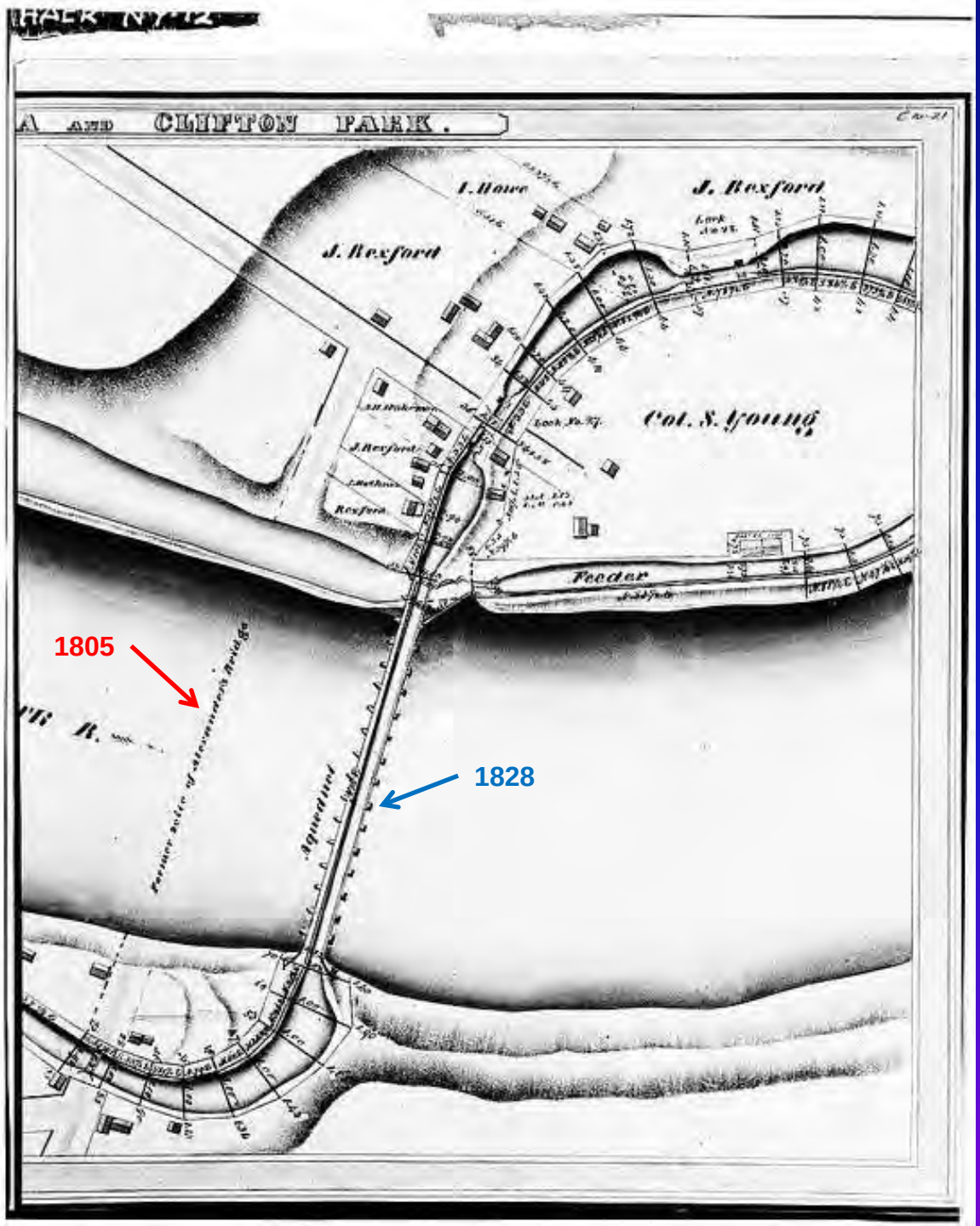
While digging to install a drainage pipe beneath Williams Street at the intersection with Balltown Road, construction workers unearthed part of the historic Erie Canal Aqueduct. Completed in 1825 and spanning the state from Albany to Buffalo, the canal was a main route of cheaply transporting people and goods from the upper Midwest to New York City.

Limestone canal blocks placed under the southern Rexford Bridge abutment to prevent erosion. Remnant of the aqueduct visible in the background.

The canal needed to cross over 18 rivers or creeks. At the Mohawk River in Rexford, an "aqueduct" or bridge was built to carry the canal waters over the river waters. Today's Aqueduct Road follows the route of the canal. The carved limestone blocks of the abutments carrying the aqueduct across the Mohawk can still be seen on either side of the river east of the bridge. Today's Schenectady Yacht Club building originally served as a canal-side general store and the canal walls lies buried beneath their entranceway.

Canal blocks placed under the northern Rexford Bridge abutment. A section of the canal aqueduct is visible in the background.

By the 1930s, the canal had been abandoned and was in-filled in many areas. In 1964, the New York State Highway Department built the exiting Rexford Bridge. Portions of the canal's limestone wall were taken down and several feet of fill were added to raise the level of the ground to meet the elevation of the new bridge. What remained of the old canal at the Mohawk River crossing was then mostly buried. However, some of the canal stones were used for erosion control, where they can still be seen today lining the river bank beneath the Rexford bridge.

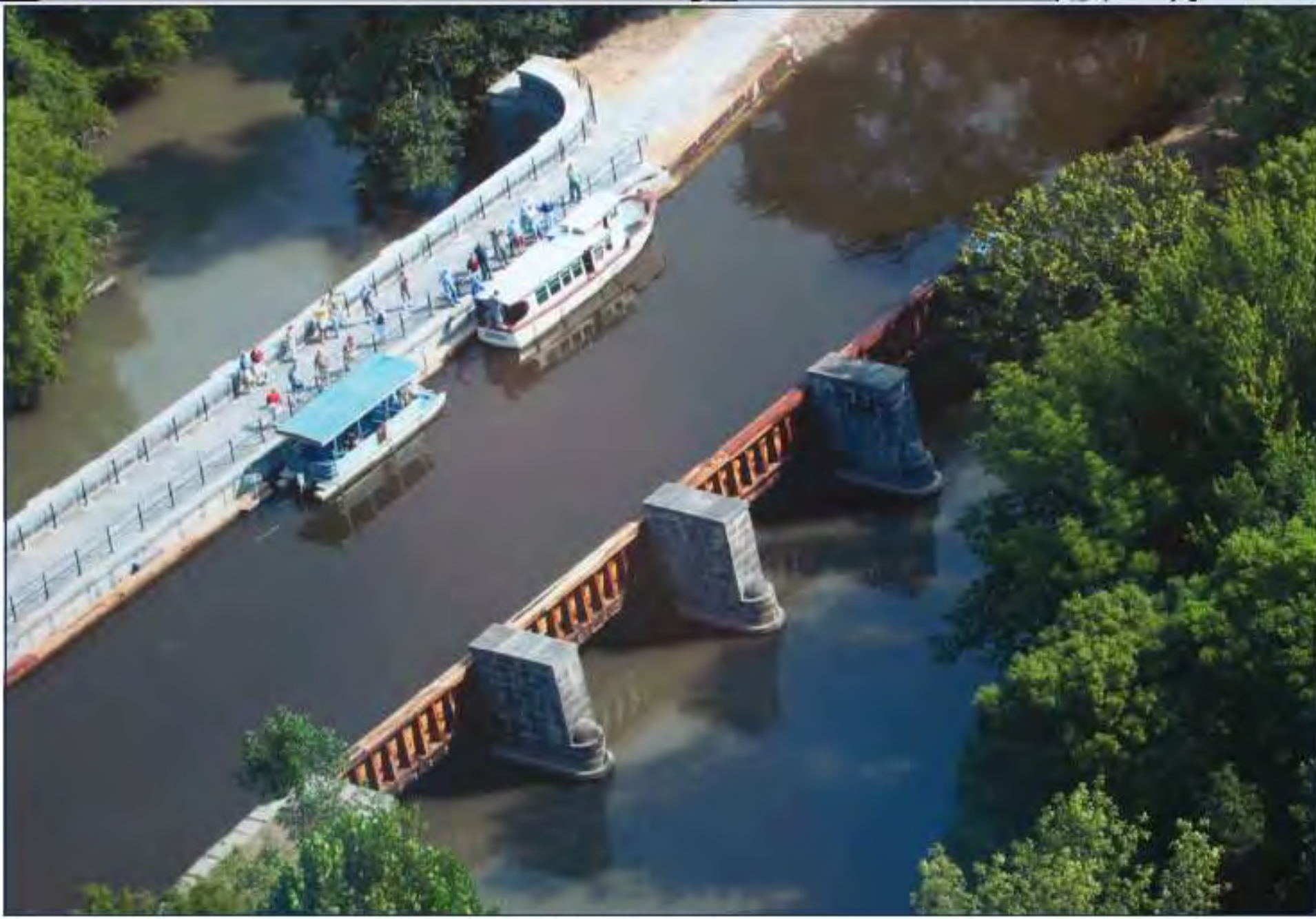

A AND CLIFTON PARK.
J. Rexford
J. Rexford
Col. S. Young
Feeder
1805
1828
Aqueduct


Saratoga Co
Enlarged Erie Canal
Clifton Park
Jenning
Rexford
SARATOGA Co
Lock 21
Hubbard Bullock
1842
1828
SCHENECTADY Co


Rexford


9 Mile Creek


9 MILE CREEK AQUEDUCT
BUILT 1842 BY NY STATE. IN
USE 1845-1918, REPLACING
1819 AQUEDUCT LOCATED JUST
DOWNSTREAM. ONE OF 32 ON
THE 19TH CENTURY ERIE CANAL.
CANAL SOCIETY
OF N.Y.S. 1999



Tour boats docked along the restored, water-filled aqueduct; Nine Mile Creek flows under it.

Camillus Erie Canal Park

Nine Mile Creek Aqueduct

Nine Mile Creek Aqueduct Restoration Complete!

After 38 years, dreams of restoring the 1844 Nine Mile Creek Aqueduct have come to fruition. The aqueduct, which is on the National Registry of Historic Sites, is the only restored navigable Aqueduct in New York State.

An aqueduct is a water-filled bridge that carries canal boats over rivers, streams or valleys. It provided a way for the first enlargement of the Erie Canal to be carried over Nine Mile Creek. This 144 foot waterway is listed as the smallest of the larger aqueducts. Four stone arches made of fine Onondaga limestone quarried from Split Rock supported the towpath. Of the 32 original aqueducts on the First Enlargement, only about seven remain intact.

Downstream from the present First Enlargement Aqueduct, can be found the remains of the 1820 Clinton's Ditch Aqueduct with an adjacent lock. Two stone arches supported the 120 foot water bridge. This area has been cleared and kiosks interpret the site.

Project Progress

Celebrate the Aqueduct!

Click here to view photo from the May 22, 2010 Aqueduct Grand Celebration.

http://www.eriecanalcamillus.com/aqueduct.htm

1922 Bridge and the 1965 Replacement Bridge

BUILDING TODAY FOR A BETTER TOMORROW

REPLACING THE REXFORD BRIDGE

START
WINTER 2015

FINISH
WINTER 2017

Project Objectives

- Improve highway capacity and traffic flow,
- Improve safety along the highway corridor
  - Construct a Roundabout at Aqueduct Rd.
  - Improve signalized intersection at Riverview Rd.
  - Reconstruct Route 146 as a 4-lane road
  - Build a bicycle/pedestrian path (MUP)
- Replace the structurally deficient bridge
  - New wider bridge with MUP

Project Challenges

- Protect the historic features within the project
- Maintain the navigable waterway
- Work with limited ROW and site access
- Divert & reconstruct the “Un-Named” Stream
- Build the bridge, 4 culverts, the Roundabout, and new widened road section
  - While maintaining the existing 2-lanes of traffic
  - And maintaining the existing bridge


Existing - 1965

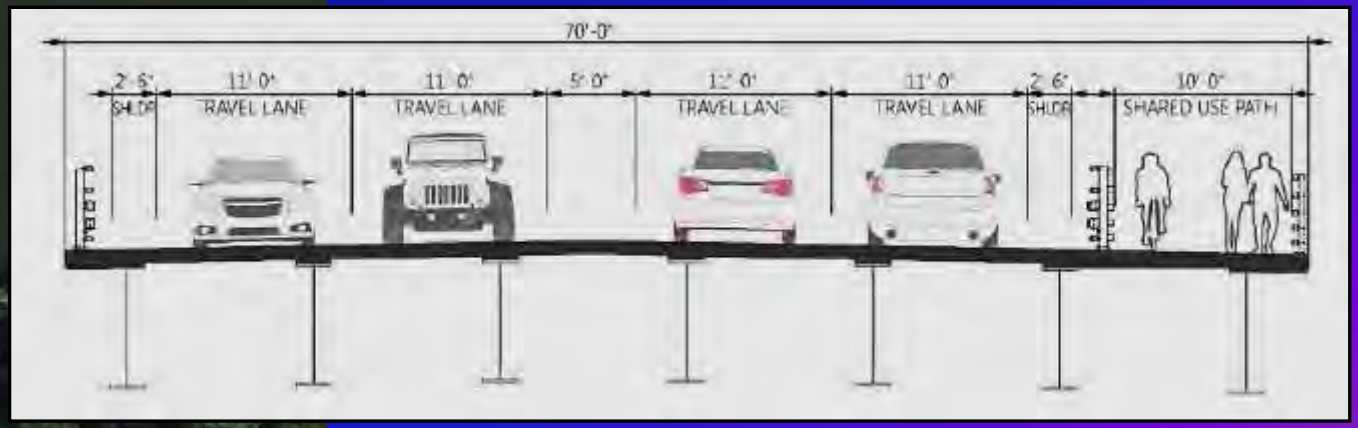

New - 2017

Old Bridge:

- 2 lanes wide
- 3 foot wide elevated “walk”
- 35 feet wide, 727 feet long
- Not pedestrian or bike friendly

New Bridge:

- 4 lanes wide
- 5’ “median”
- 10’ wide shared use path
- 71 feet wide, 770 feet long



Bridge Work Schedule

- Fall 2015
  - Tree Removals and Clearing
  - Utility and Historic Explorations
- 2016
  - Build 2 Abutments
  - Build 3 Piers in water
  - Erect Steel Girders
- 2017
  - Pour concrete deck
  - Open the bridge to traffic

Fall 2015


146
Aqueduct Rd


SoftDig


Spring 2016
04/16/2016


KOBELCO
KOBELCO
SK350


06/09/2016


06/14/2016


07 28 2016


07/08/2016

09/08/2016


08 01 2016


08 04 2016

08/30/2016


08/30/2016


09/08/2016

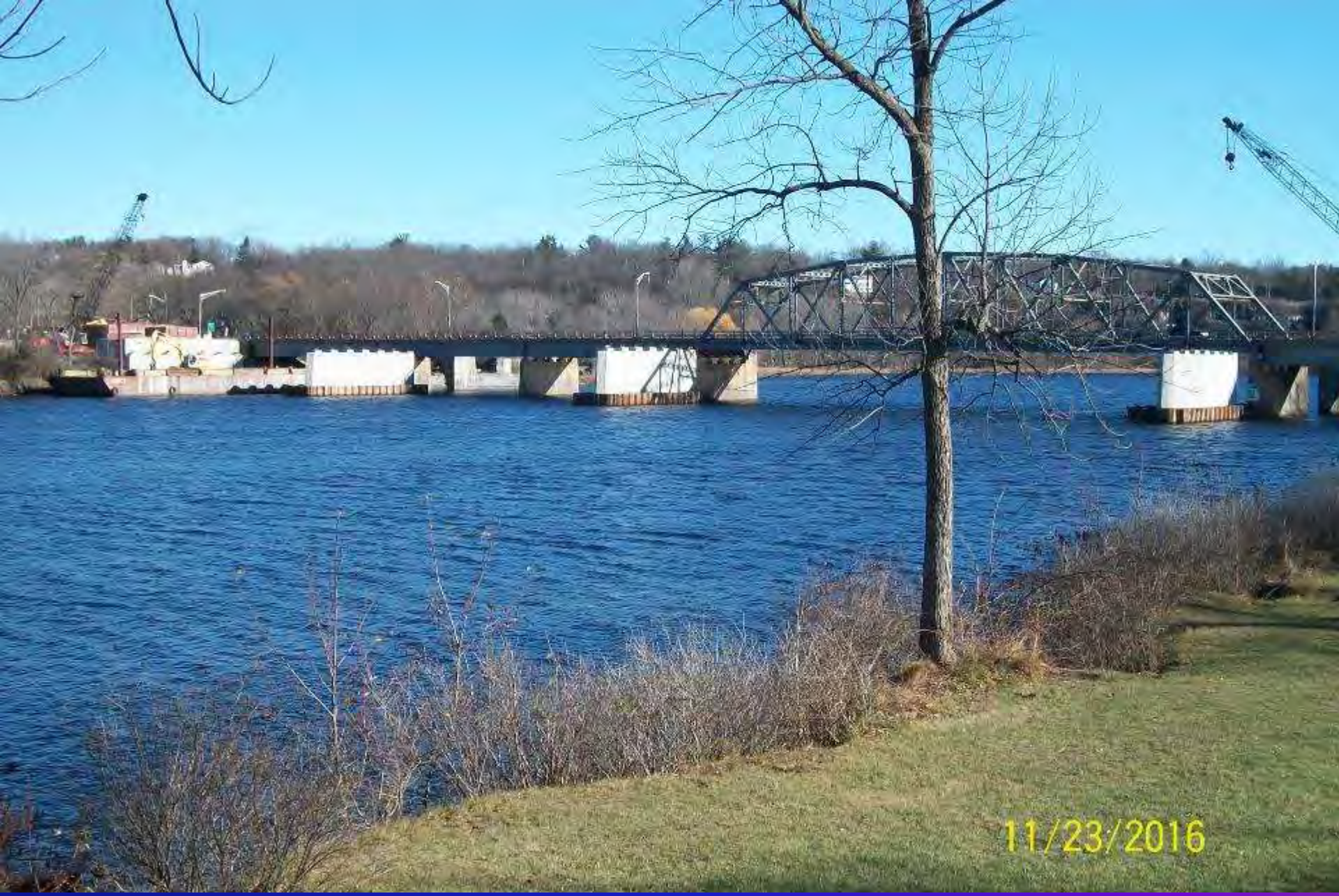

Link-Belt
HUB
SOIL


MUB

09/02/2016


11/18/2016

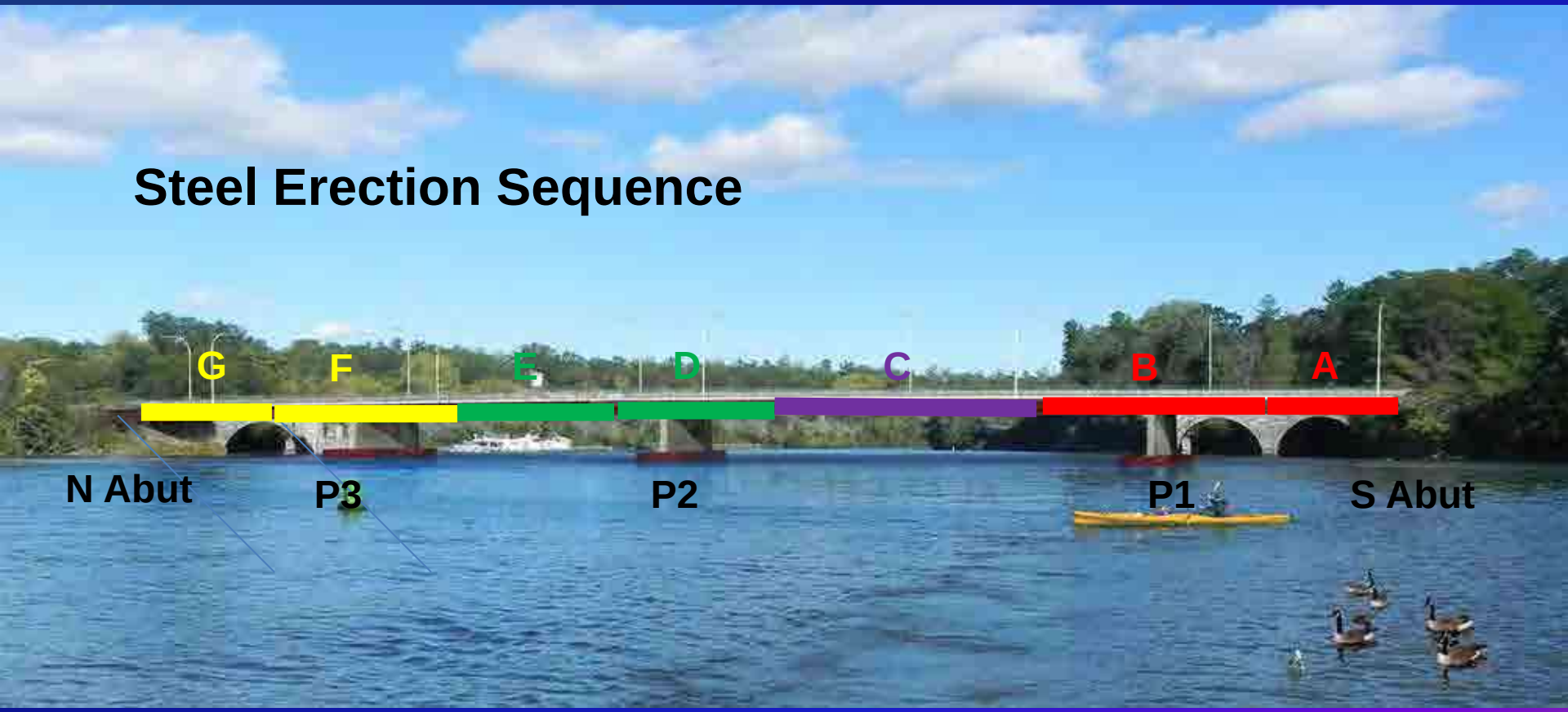
11/18/2016


11/23/2016


12/15/2016

Spring 2017

Steel Erection Sequence




04/11/2017


218
04/12/2017


04/12/2017


MAC
04/12/2017

04/12/2014


35 TON
04/15/2017


EAST
146


Fretthofer's
SKY 6


06/09/2017


06/26/2011


EAST
146


07/06/2017


07/26/2017

Project Limits

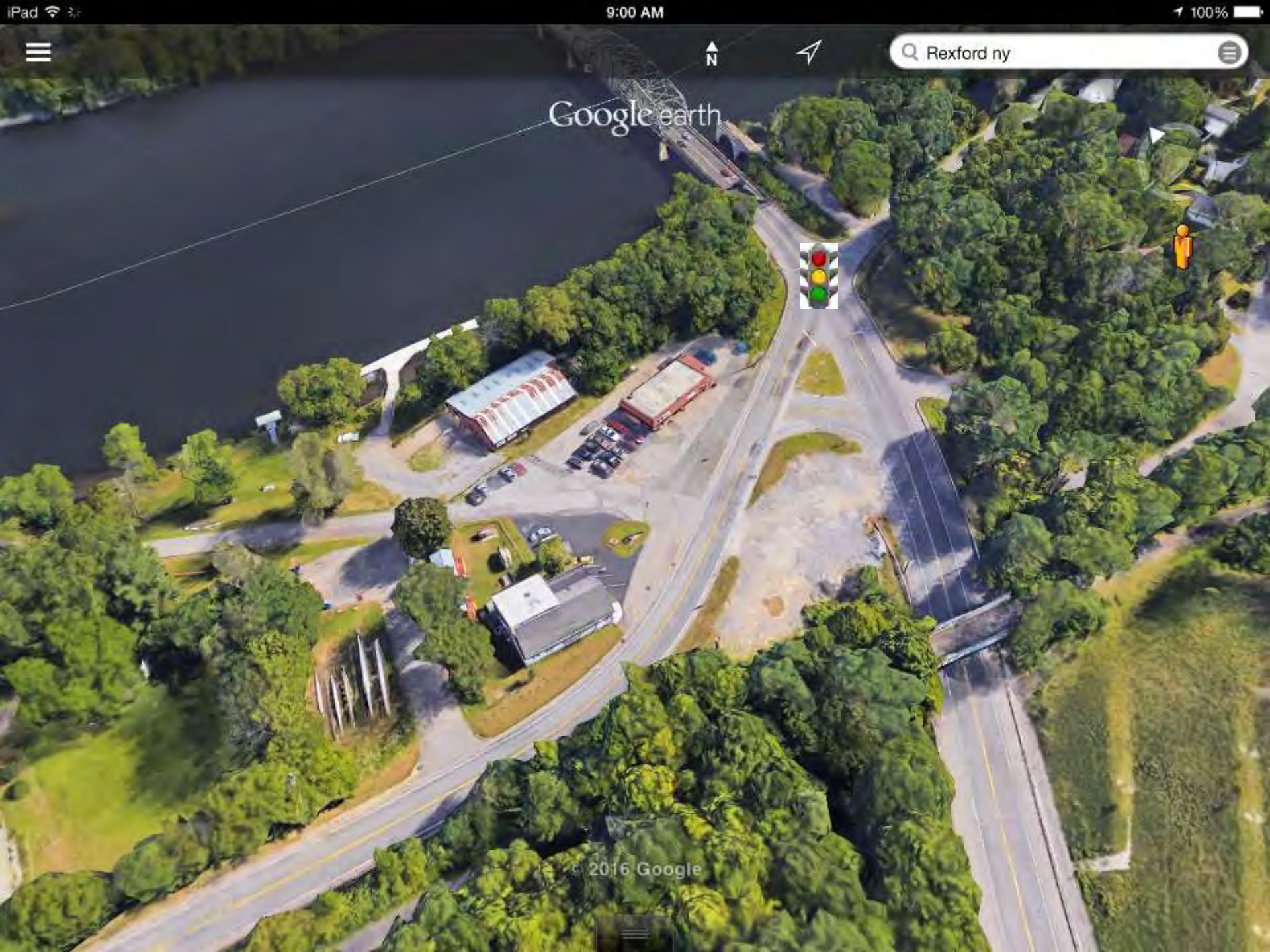
500’ South of Aqueduct Rd intersection

About ¾ mile overall length

800’ North of Riverview Rd


HIGH
VOLTAGE
ABOVE


10/17/2017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Rexford ny
Google earth
© 2016 Google


08/22/2017


ADLER
MAC


ADLER
09/12/2017


09/12/2017

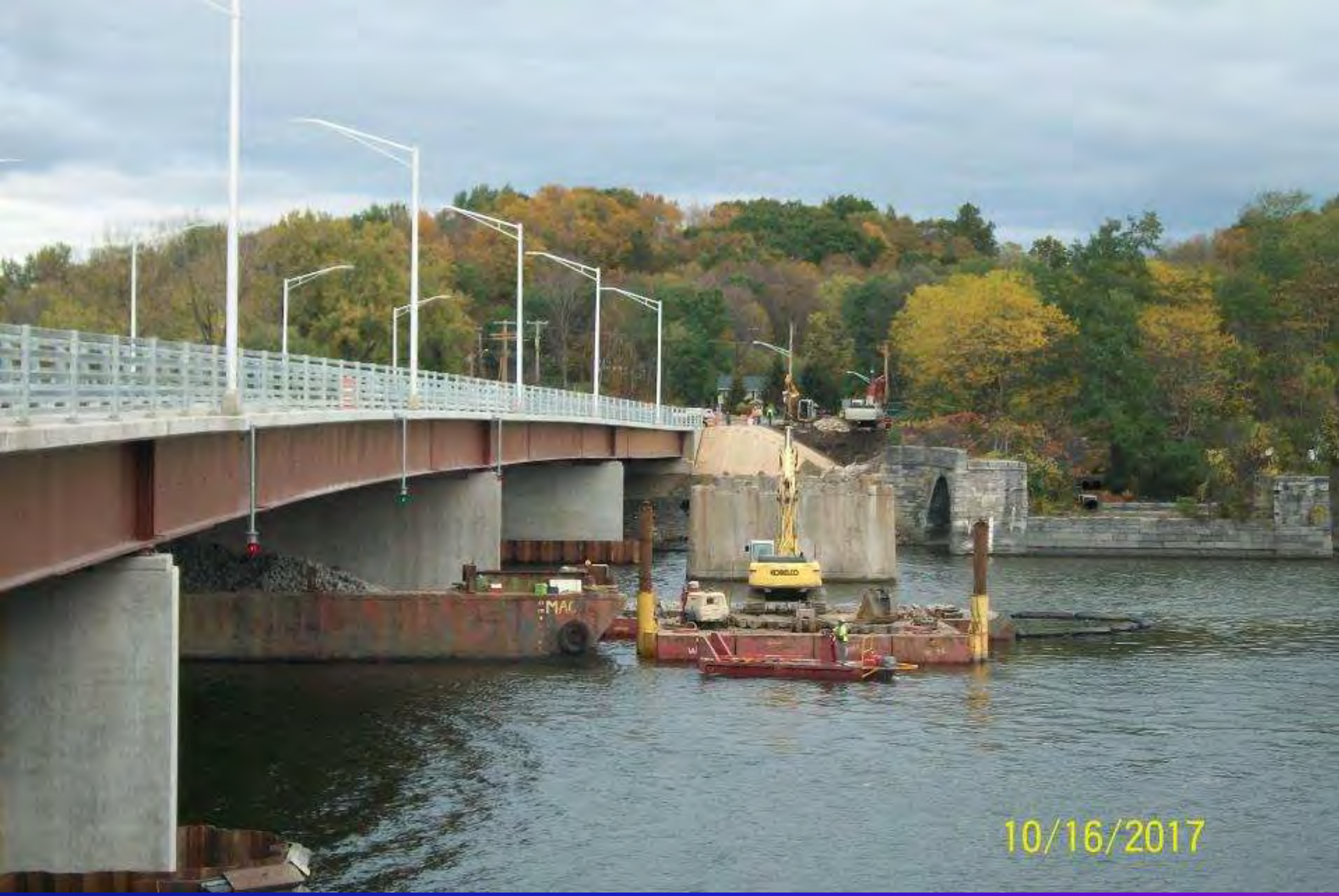

09/13/2017


09/15/2017

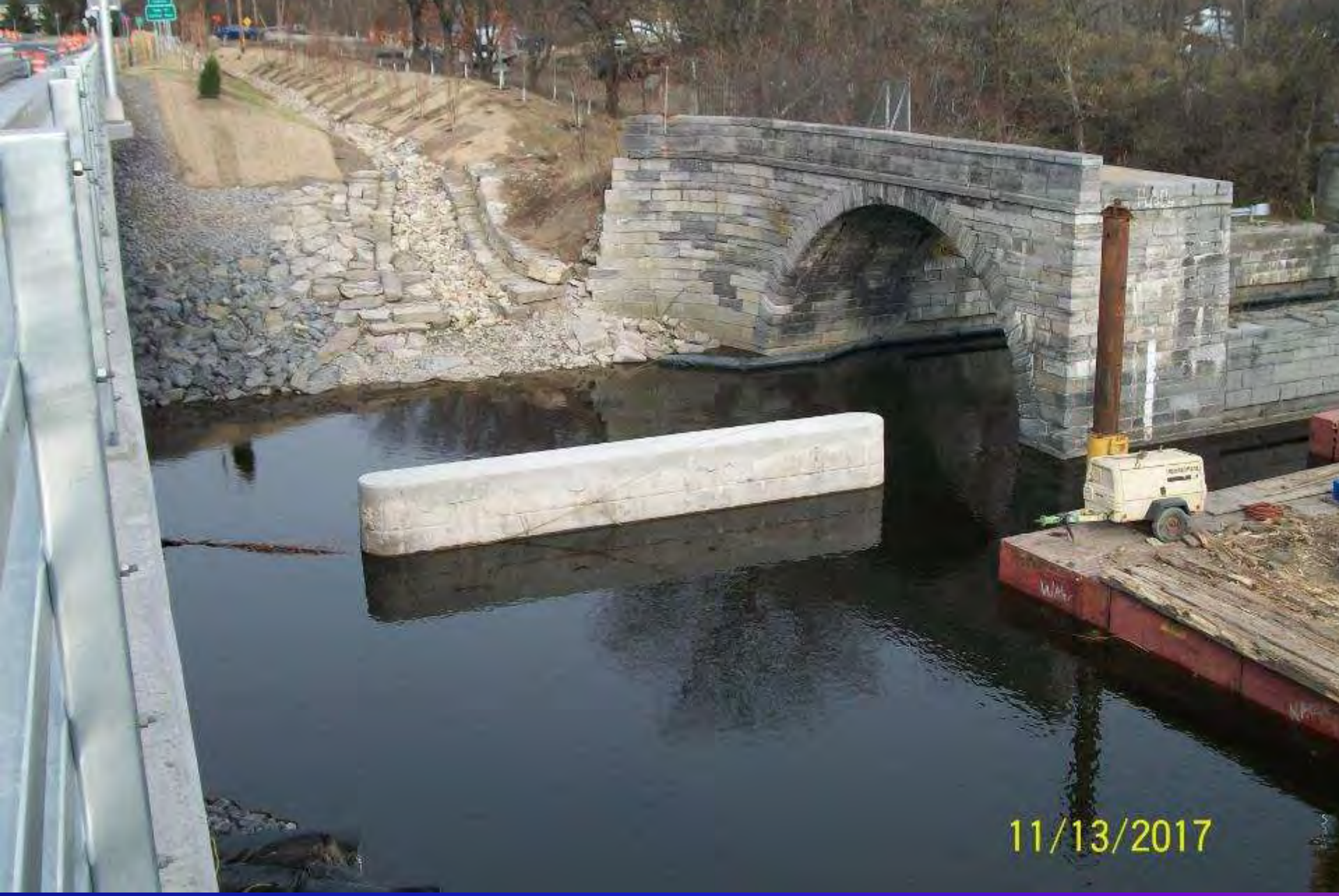

09/28/2017


10/04/2017


09/26/2017


10/16/2017


KOBELCO
10/17/2017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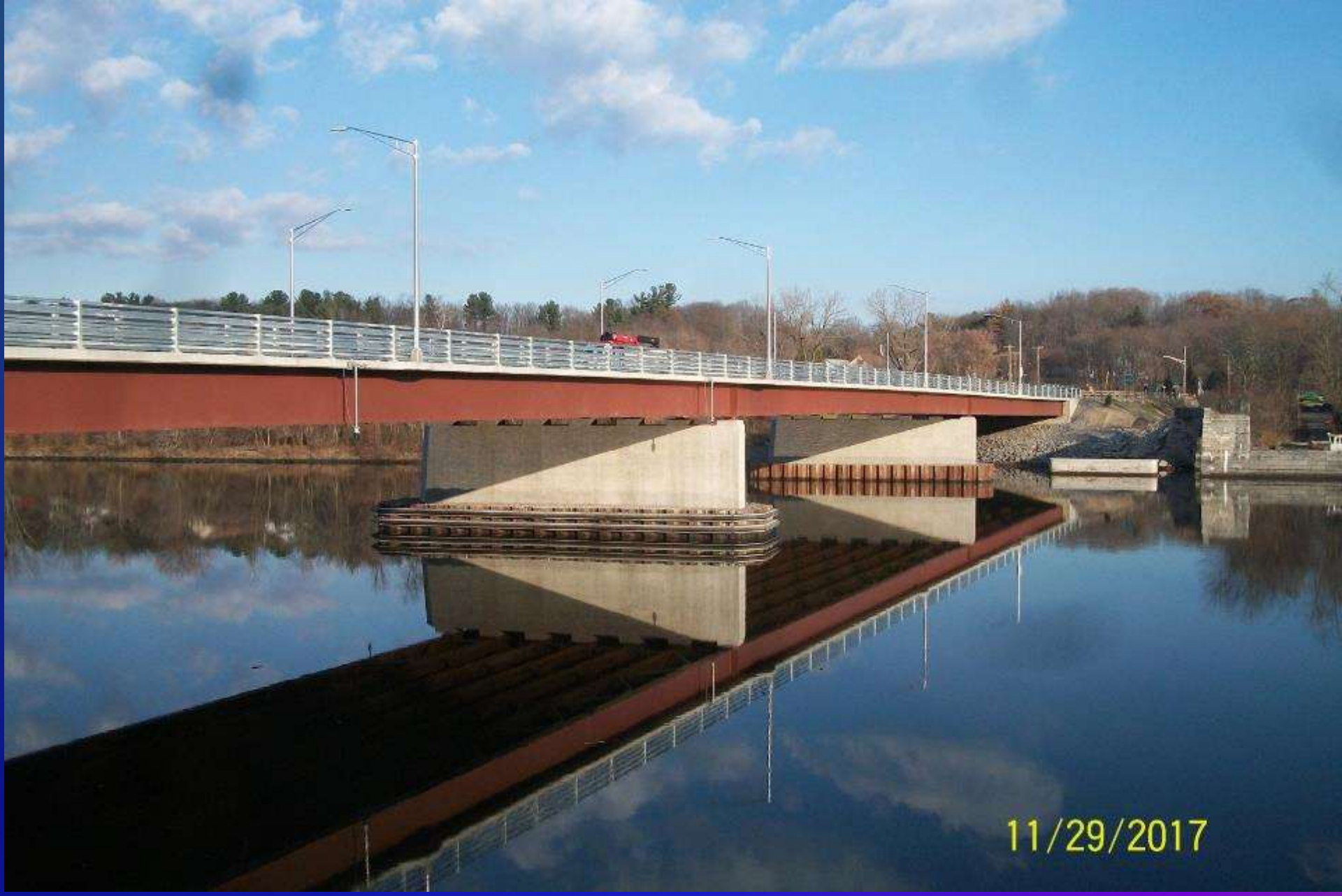
11/29/2017

AMERICAN PUBLIC WORKS ASSOCIATION
APWA
NEW YORK CHAPTER

NYS 2017 Project of the Year
Structures Category ($25 to $75 million)

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

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PDH Questions

1. When was the original Erie Canal opened?
    a) 1817
    b) 1825
    c) 1836
    d) 1862

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PDH Questions

2. What types of foundations were used on the new Rexford Bridge?

a) H Piles
b) Spread Footings
c) Drilled Shafts
d) All of the above

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a) H Piles
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PDH Questions

3. True or False -- The structural steel on the new Rexford Bridge is painted?

   a) True
   b) False

PDH Questions

3. True or False -- The structural steel on the new Rexford Bridge is painted?

a) **True**

b) **False**

All the steel is weathering steel, but the outside faces of the fascia girders are also painted.

Questions

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