

Construction Inspection Series
NICET Level I – Highway Construction Inspection
Refresher Series #1
Lesson #1 – Route 51 over Steele Creek



Expertise Project VR
Develop expertise. Create the workforce.

Construction Inspection Refresher Series

New York State Department of Transportation

ExPr

- This program is intended to assist construction inspection professionals **prepare for early credentialing exams** – especially the NICET Transportation Inspection Level 1 Exam.
- This program features **360-degree virtual reality (360 VR)** videography and tools to help introduce transportation infrastructure related work environments to those who have not spent much time on site.
- This program is also intended for use in high school and college level programs to enable educators to utilize NYSDOT content inside of their curricula and to help **recruit candidates through introduction of career fields** in the NYSDOT and the broader transportation infrastructure industry.



Instructor Introduction

Mike Baron

ExPr

- **Engineer.** Professional Civil Engineer, Licensed in New York and other states, practicing for ~ 20 years, with initial focus in building structural systems, but expanded to serve in a variety of infrastructure design roles and projects.
- **Educator.** Served 3.5 years as an instructor of Civil Engineering Technology at Hudson Valley Community College, teaching courses such as print reading, soils and foundations, structural steel and concrete design, and others.
- **Entrepreneur.** Co-Founder of Expertise Project and working to develop a network to make it easier to gain expertise. Captured much of the video content contained in this refresher series.
- Believer in human expertise and that all people are capable of finding rewarding careers when given the right exposure and early training.



Transportation Construction Inspection

NICET Level 1 – Content Outline

The NICET Level 1 Exam measures a candidate's ability to follow simple technical instructions and learn from more experienced inspectors and engineers.

Some candidates require support refreshing their ability to read plans, perform arithmetic calculations, and understand the basic environments of a construction site.

- Plans and Specifications (30 – 35%)
- Measurements and Surveys (20 – 25%)
- Tools and Equipment (10 – 15%)
- Personal Safety (10 – 12%)
- Site Operations (10 – 20%)



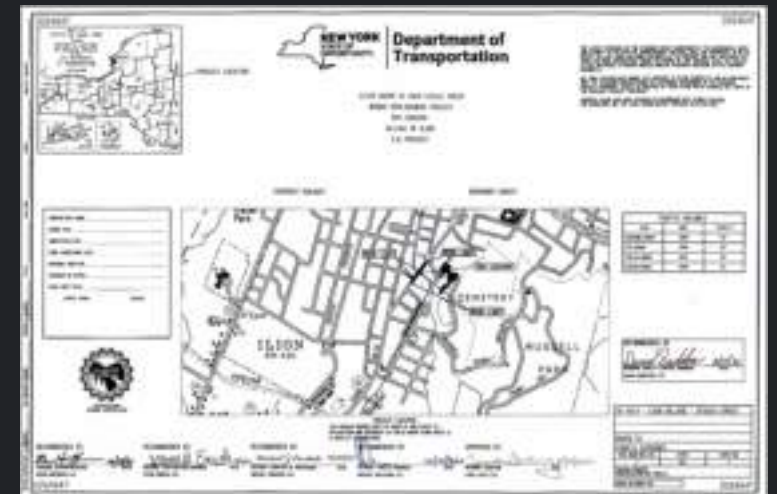
Route 51 over Steele Creek

Lesson Outline

This lesson introduces a real-world construction project and practices connecting a series of construction documents and specifications to what is seen on video.

- | | |
|------------------------------------|-----------------------------|
| 1. Site Introduction | Presentation |
| 2. VR Field Trip | Self Guided / Presentation |
| 3. Document Introduction | Self Guided / Presentation |
| 4. Bridge and Road Questions | Self Guided, with Solutions |
| 5. Stream and Foundation Questions | Self Guided, with Solutions |
| 6. Dewatering Discussion | Self Guided / Presentation |

This lesson assumes that you have completed the “Lesson #0 – Fundamentals” series and are familiar with the software tools and terminology required for this course.



Chapter 1 - Site Introduction



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Route 51 over Steele Creek

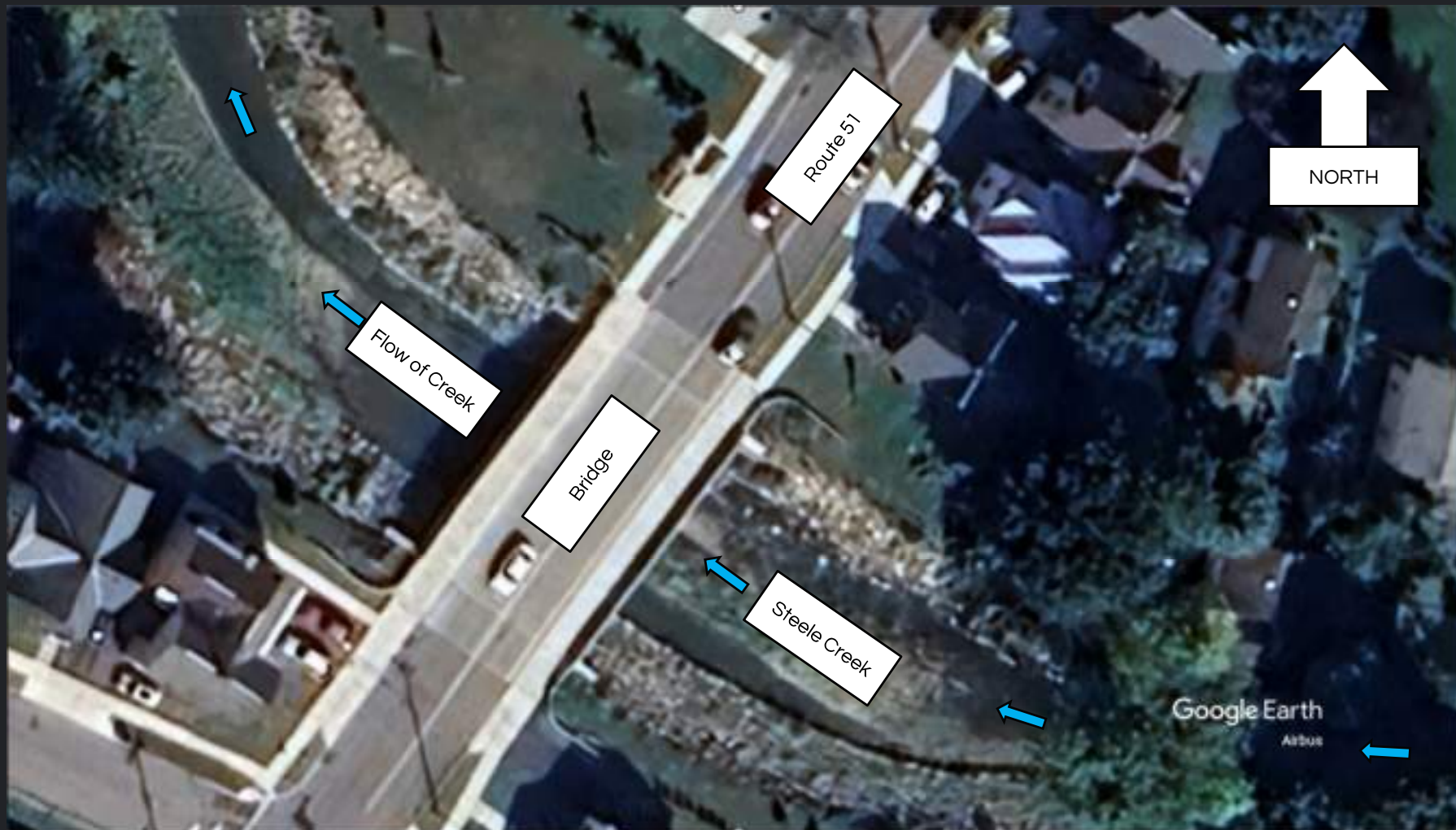
Illion, New York

ExPr



Route 51 over Steele Creek

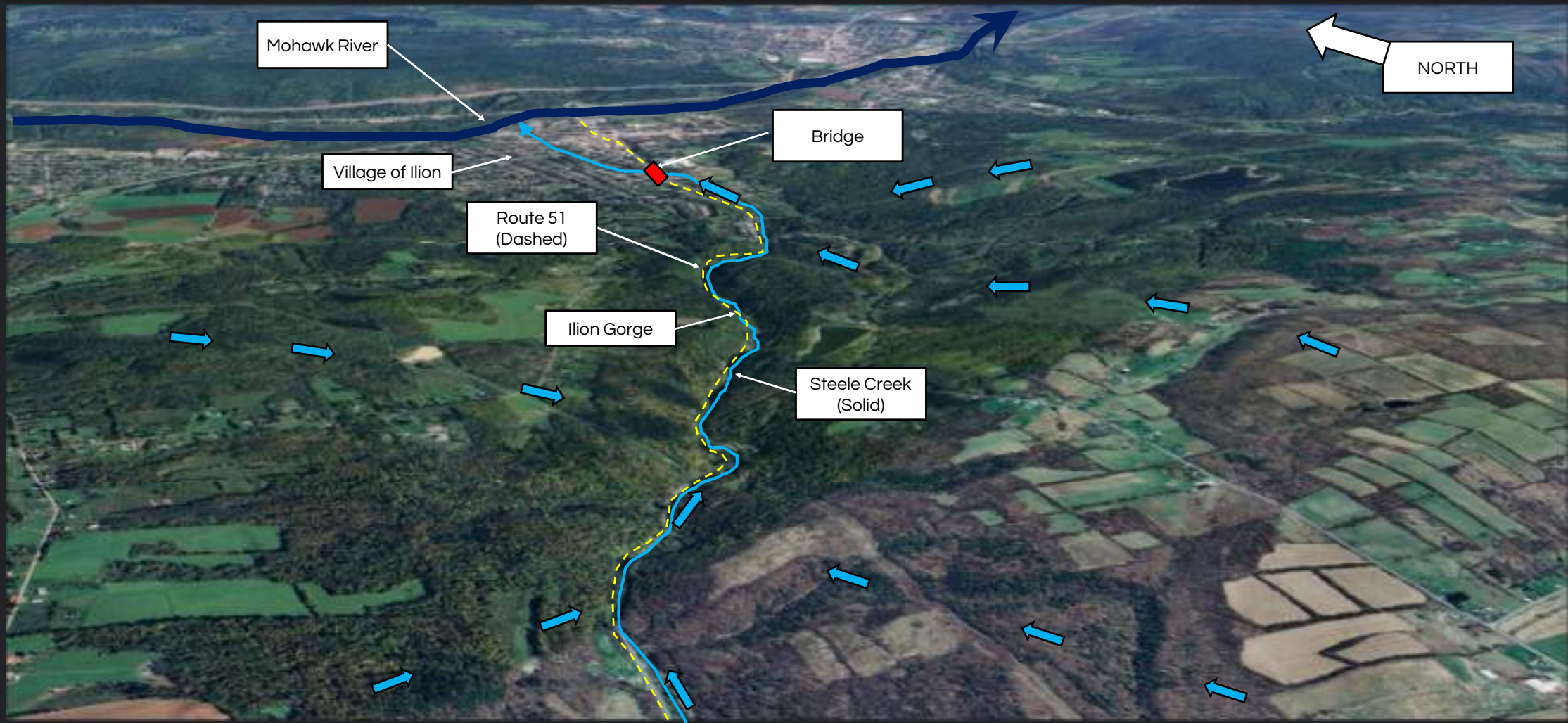
Ilion, New York



Route 51 over Steele Creek

Ilion, New York

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Route 51 over Steele Creek

Ilion, New York

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Original Bridge

- Masonry Stone Arch constructed by the Village of Ilion around 1899.
- Structural system was satisfactory condition as of 2010s.
- Small opening under bridge constricted flow of Steele Creek during high flow events, causing frequent flooding in Village of Ilion
- Village requesting replacement this and other bridges for years to provide relief from flooding events.



[Source: Transportation Project Report – RT 51 over Steele Creek by NYSDOT / US Federal Highway Administration]

Route 51 over Steele Creek

Illion, New York

Sample "Ice Jam" Flooding Event – January 2018 – Old Bridge



[Source: WKTV Facebook Page]

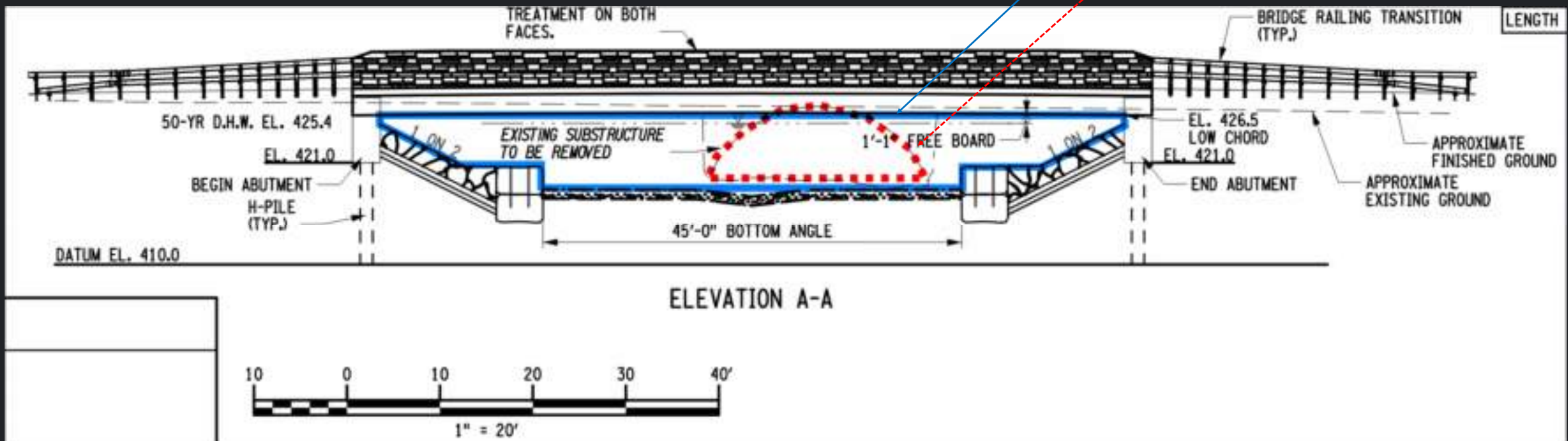
Route 51 over Steele Creek

Illion, New York

This new bridge is designed to allow more water to flow under the bridge to help limit the likelihood of flooding during high flow events.

Opening under the New Bridge

Opening under the Original 1899 Bridge



Route 51 over Steele Creek

Illion, New York

Sample Improved Flow – December 23, 2023 – New Bridge



[Source: Jeremy Rich, CVA District Superintendent, 2023]