

Crystal Lake Road Bridge



Public Information Meeting
Town of Gilmanton, New Hampshire
November 6, 2017



Hoyle, Tanner
& Associates, Inc.

Introductions

➤ Project Team:

- Sean T. James, P.E. – Project Manager, Vice President
- Josif Bicja, P.E. – Senior Structural Engineer
- Audrey G. Beaulac, P.E. – Senior Transportation Engineer
- Nichole E. Davis – Public Outreach

➤ Funding:

- NHDOT 80% of Project Costs
- Town 20% of Project Costs



Presentation Outline

- Public Outreach
- Project Goals
- Project Discussion
- Project Summary
- Questions



Public Outreach

- Local Concerns Meeting on August 7, 2017
 - Maintenance of Traffic/Short Duration Closure
 - Longer Bridge Span
 - Maintain or Slightly Increase Vertical Clearance Above the Water Level
 - Flooding on Upstream Properties
 - Investigate Increase in Lane Widths/Traffic Calming
 - Provide Fishing/Viewing Platform
 - Wildlife Passage Through Bridge Opening



Project Goals

- Replace Bridge with New Low-Maintenance Structure
 - Minimum 75-Year Design Service Life
 - Provide Adequate Freeboard at Design Flood Events
- Minimize Construction Duration and Road Closure
- Minimize Project Costs
- Minimize Environmental and Wildlife Impacts
- Meet NHDOT Criteria as Much as Practicable
 - 1' Freeboard at 50-Year Design Flood Event
 - 24' minimum wide Travelway (face of rail to face of rail)
 - HL-93 Design Load (36 tons)



Project Discussion

- Built in 1929
- 10' Clear Span
- 19'-6" Travelway
- Concrete Rigid Frame
- Heavy Spalls/Exposed Rebar



Project Discussion

➤ Stone Walls (Crystal Lake Side) – Poor Condition



Project Discussion

➤ Stone Slopes (Nelson Brook Side) – Poor Condition



Project Discussion

➤ Proposed Bridge Opening

- 30' Clear Span
- Provides Approx. 7" of Freeboard above 50-Year Flood Event
- Existing Vertical Clearance Below Water Level Maintained



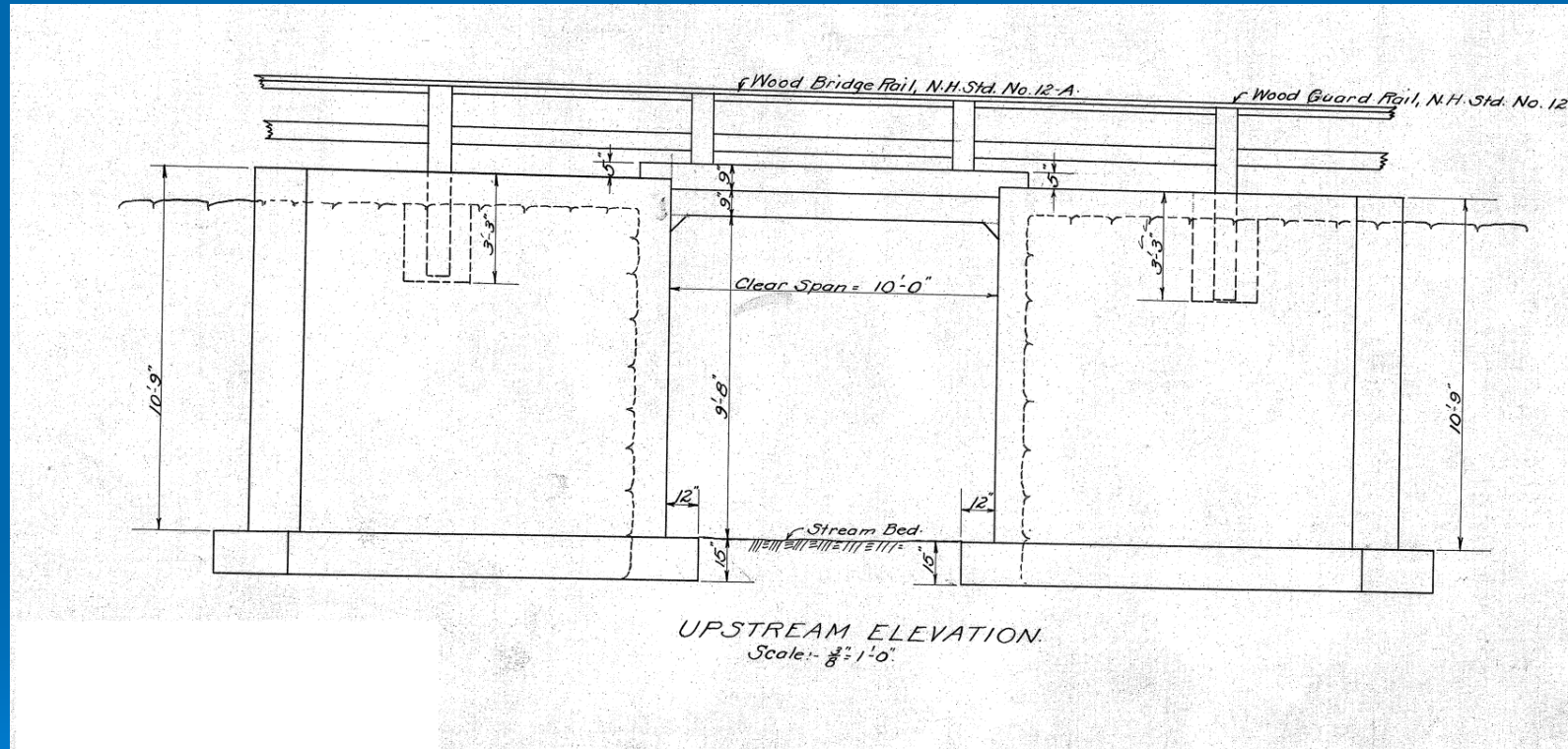
Project Discussion

➤ Coordination to Date with Resource Agencies

- NHDES
 - Mitigation Required Due to Wetland Impacts
 - Wetland Restoration/Creation
 - In-Lieu Payment to Aquatic Resource Mitigation (ARM) Fund
- NH Fish & Game Department
 - Wood Turtles
 - Loons
 - Bridle Shiner
 - Preferred Construction from September to December

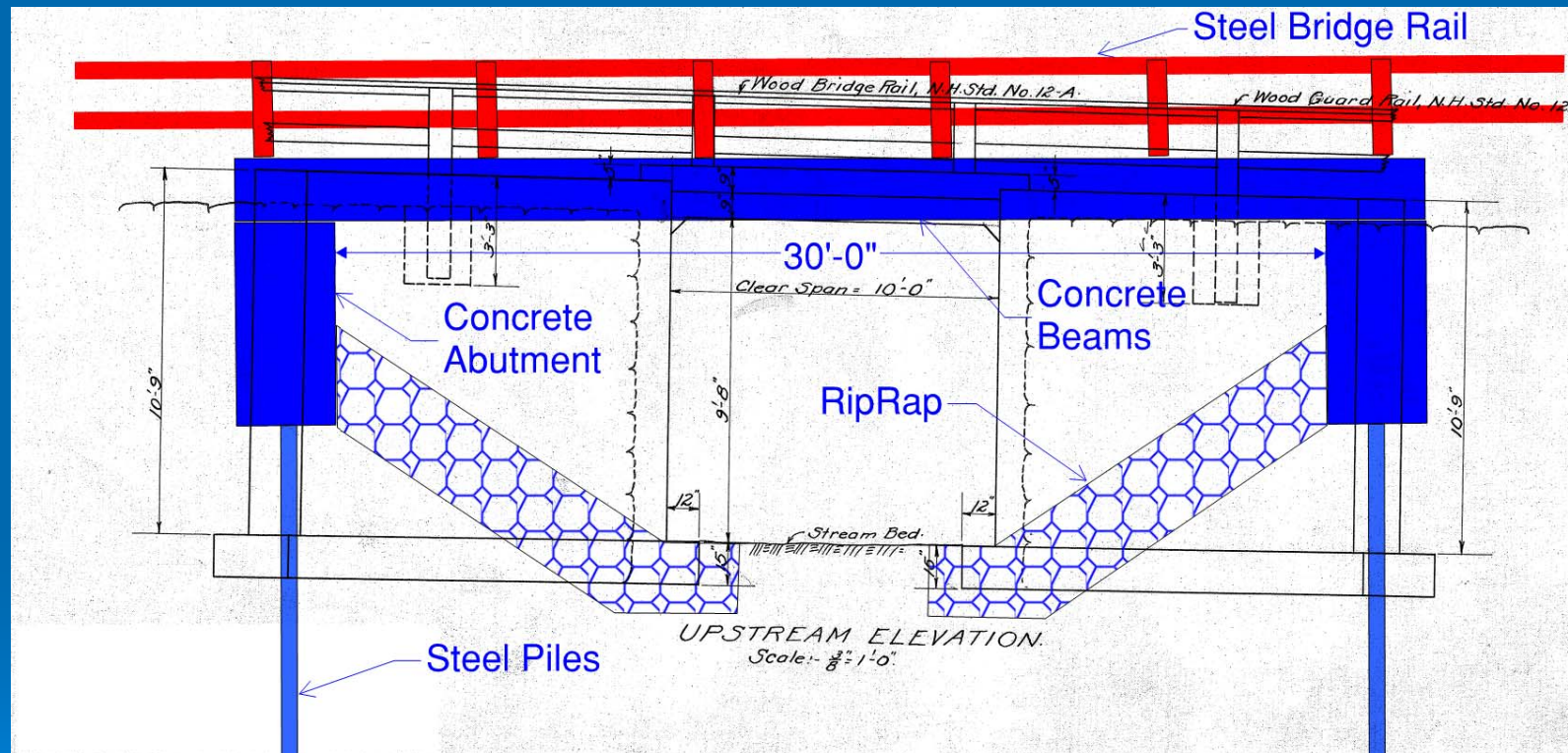


Project Discussion



Existing Bridge Elevation

Project Discussion

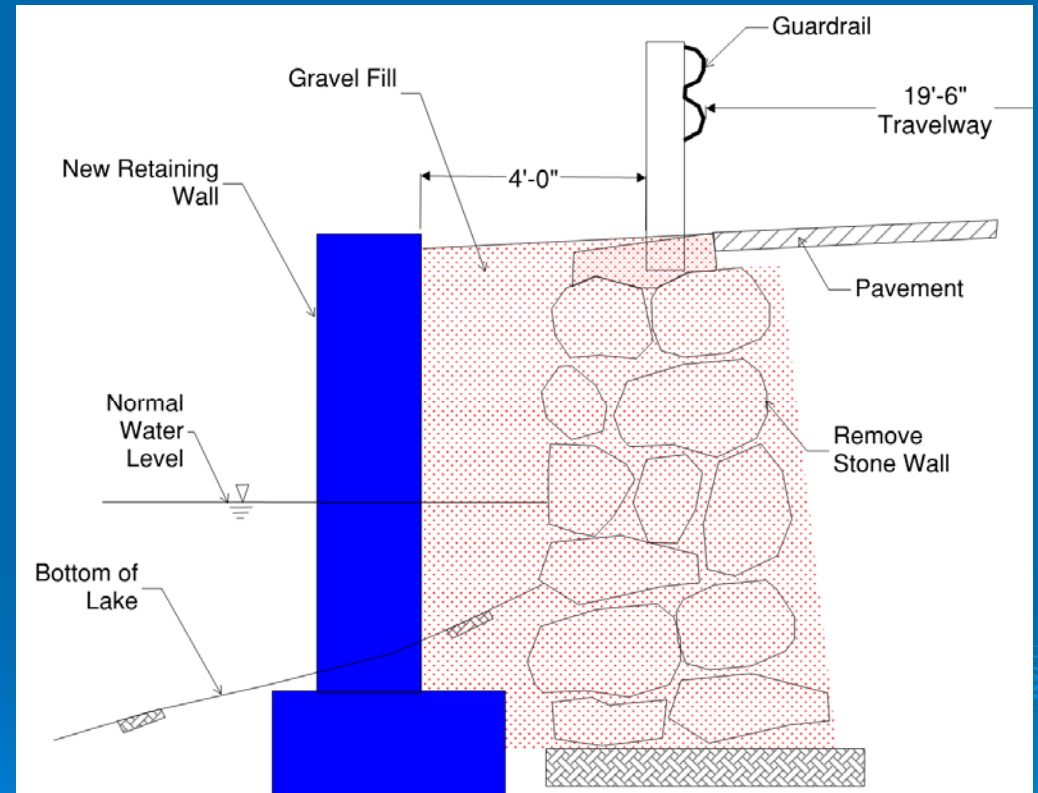


Proposed Bridge Elevation

Project Discussion

➤ Roadway Option 1

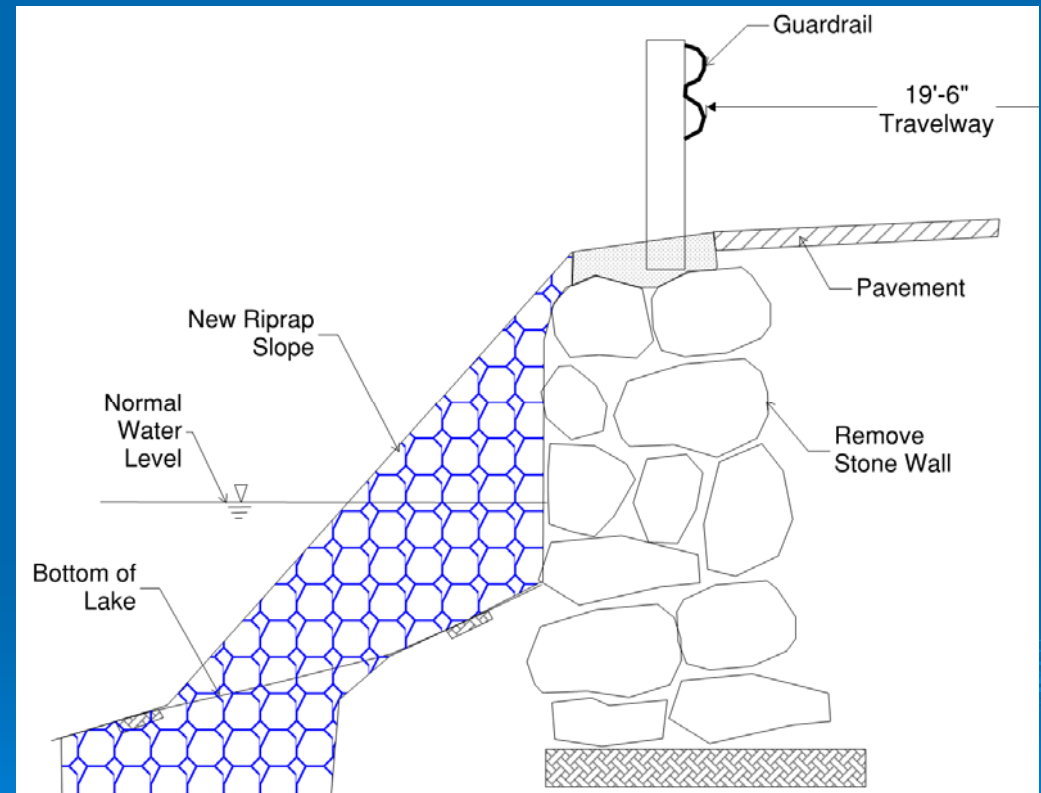
- Maintain 19'-6" Travelway
- Remove Existing Stone Walls
- Construct New Walls
- New Walls Cost \$380,000
- Impacts to Water Resources
- Mitigation Required



Project Discussion

➤ Roadway Option 2

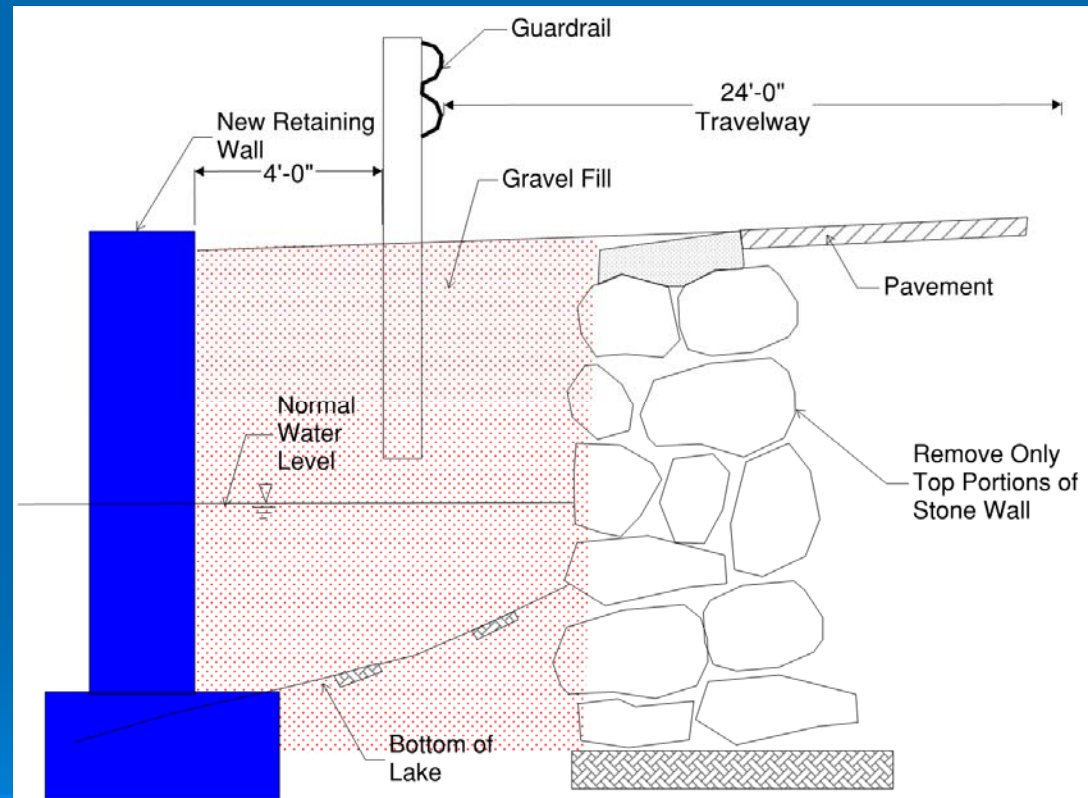
- Maintain 19'-6" Travelway
- Remove Existing Stone Walls
- Construct Steep Riprap Slopes
- Riprap Slopes Cost \$70,000
- Impacts to Water Resources
- Mitigation Required



Project Discussion

➤ Roadway Option 3

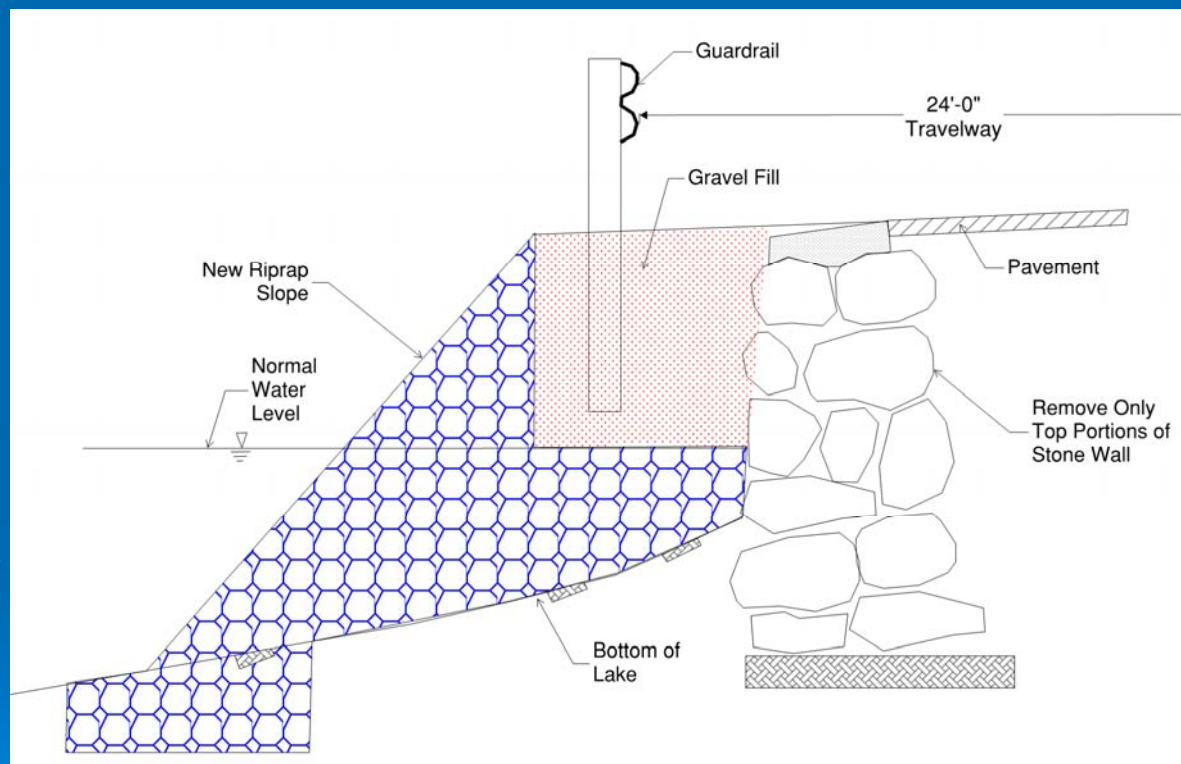
- Widen to 24'-0" Minimum Travelway
- Remove Top Portions of Existing Stone Walls
- Construct New Walls
- New Walls Cost \$390,000
- Impacts to Water Resources
- Mitigation Required



Project Discussion

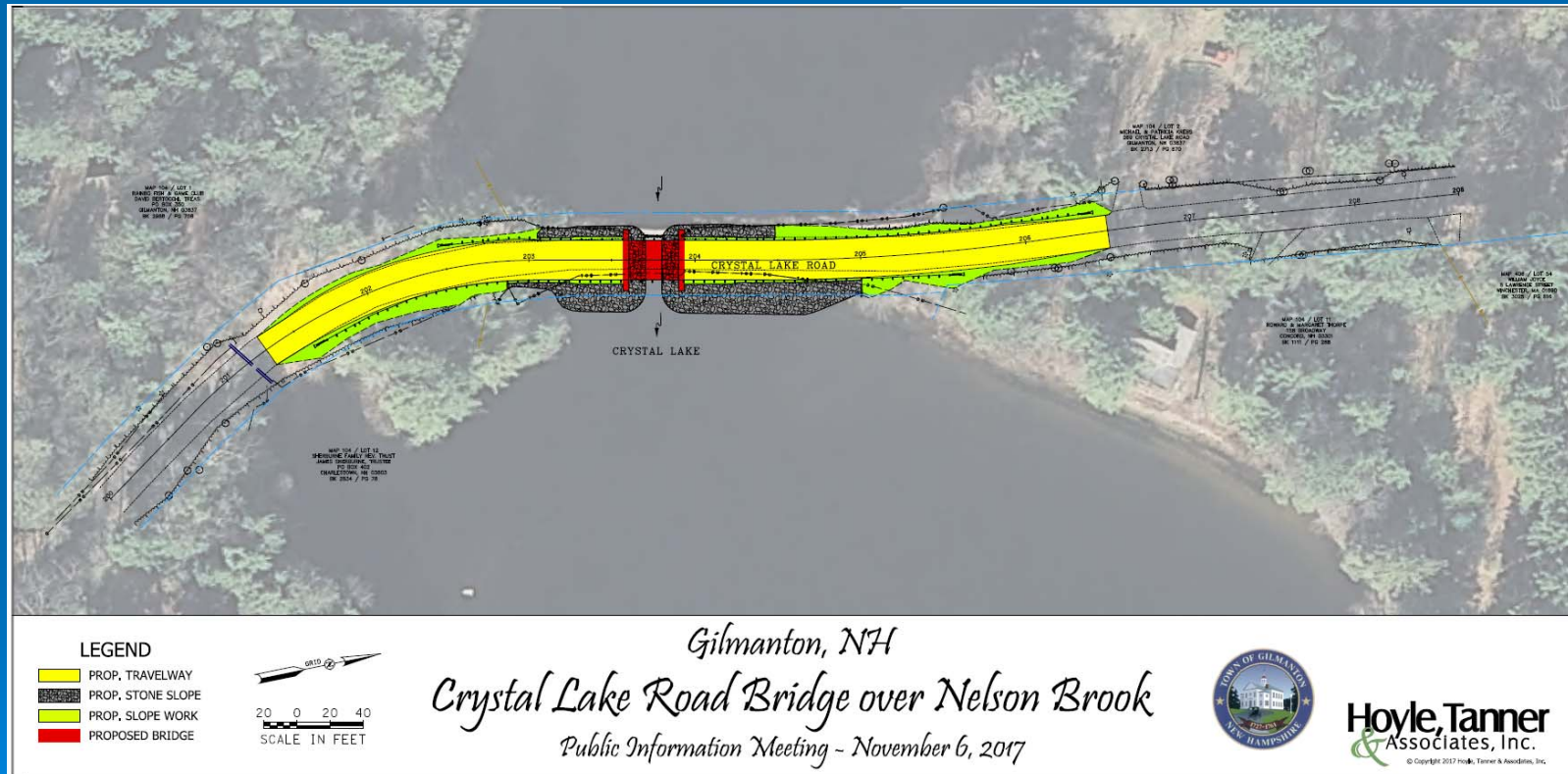
➤ Roadway Option 4

- Widen to 24'-0" Minimum Travelway
- Remove Top Portions of Existing Stone Walls
- Construct Steep Riprap Slopes
- Riprap Slopes Cost \$80,000
- Impacts to Water Resources
- Mitigation Required

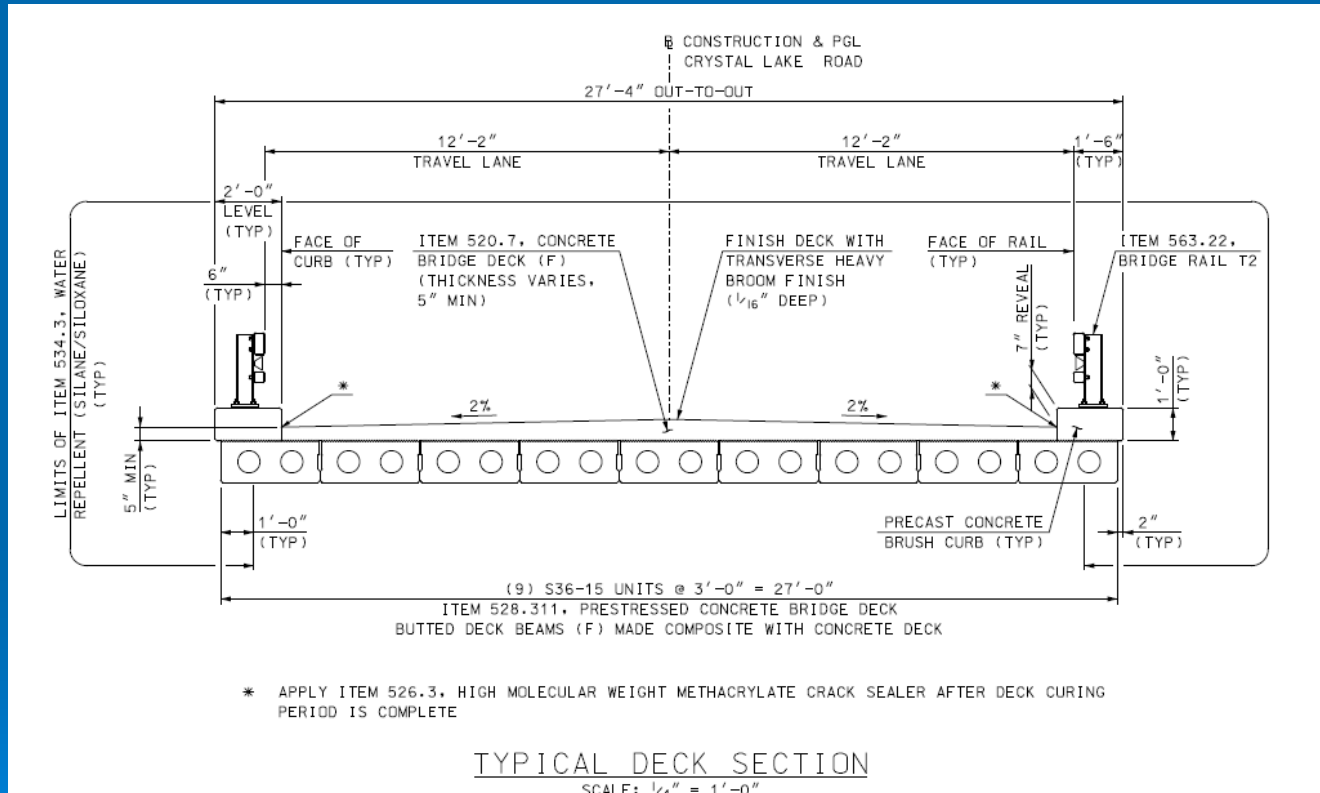


Project Discussion

➤ Roadway Option 4



Project Discussion



Project Discussion

Sample Deck Beam Superstructure



Project Discussion

- Fishing/Viewing Platform
 - Southwest Quadrant



Project Discussion

➤ Project Schedule

- Preliminary Design & Permitting – 2018
- Final Design – 2019
- Bid – January 2020
- Construction – 2020



Project Discussion

➤ Construction Schedule

- 60 to 75-day Full Closure
- Ideal During Lake Drawdown
- Monday – Friday 7:00 am to 7:00 pm



Project Summary

- Local Concerns Meeting on August 7, 2017
 - Maintenance of Traffic/Short Duration Closure – 60 to 75 days
 - Longer Bridge Span – Proposed 30' Span
 - Maintain or Slightly Increase Vertical Clearance Above the Water Level – Maintaining Existing Vertical Clearance
 - Flooding on Upstream Properties – Increased Span Reduces Likelihood of Upstream Flooding
 - Investigate Increase in Lane Widths/Traffic Calming – Proposing 24' Wide Travelway
 - Provide Fishing/Viewing Platform – Southwest Quadrant
 - Wildlife Passage Through Bridge Opening – Coordinating with NH Fish & Game



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- Replace Bridge with New Low-Maintenance Structure
 - Minimum 75-Year Design Service Life
 - Provide Adequate Freeboard at Design Flood Events
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- Minimize Environmental and Wildlife Impacts
- Meet NHDOT Criteria as Much as Practicable
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Questions

Thank you for your Attention

Any Questions?

