



Red Wing Bridge Project



PAC #7/TAC #10 Meeting
January 16, 2014

Your Destination...Our Priority





Agenda

- Process Overview and Progress to Date
 - What's Been Accomplished
 - Minnesota Approach Alternatives
 - River Crossing
- Environmental Assessment Process
- Visual Quality Process
- Public Outreach Update
- Next Meetings





Schedule Overview and Progress to Date

- MnDOT and WisDOT began the study and design process seven years in advance of planned construction;
 - Unique project setting
 - High value natural and cultural resources;
 - Applicable federal and state regulations;
 - Importance of on-going stakeholder involvement
- Initial coordination and studies began in 2011;
- Alternative Analysis began in early 2012;
- Construction is planned for 2018





What's Been Accomplished

- Determined the river crossing will be kept at current location;
- Identified and refined a recommended set of concepts for the Minnesota and Wisconsin approach roadways;
- Decided to proceed with a new two-lane river crossing;



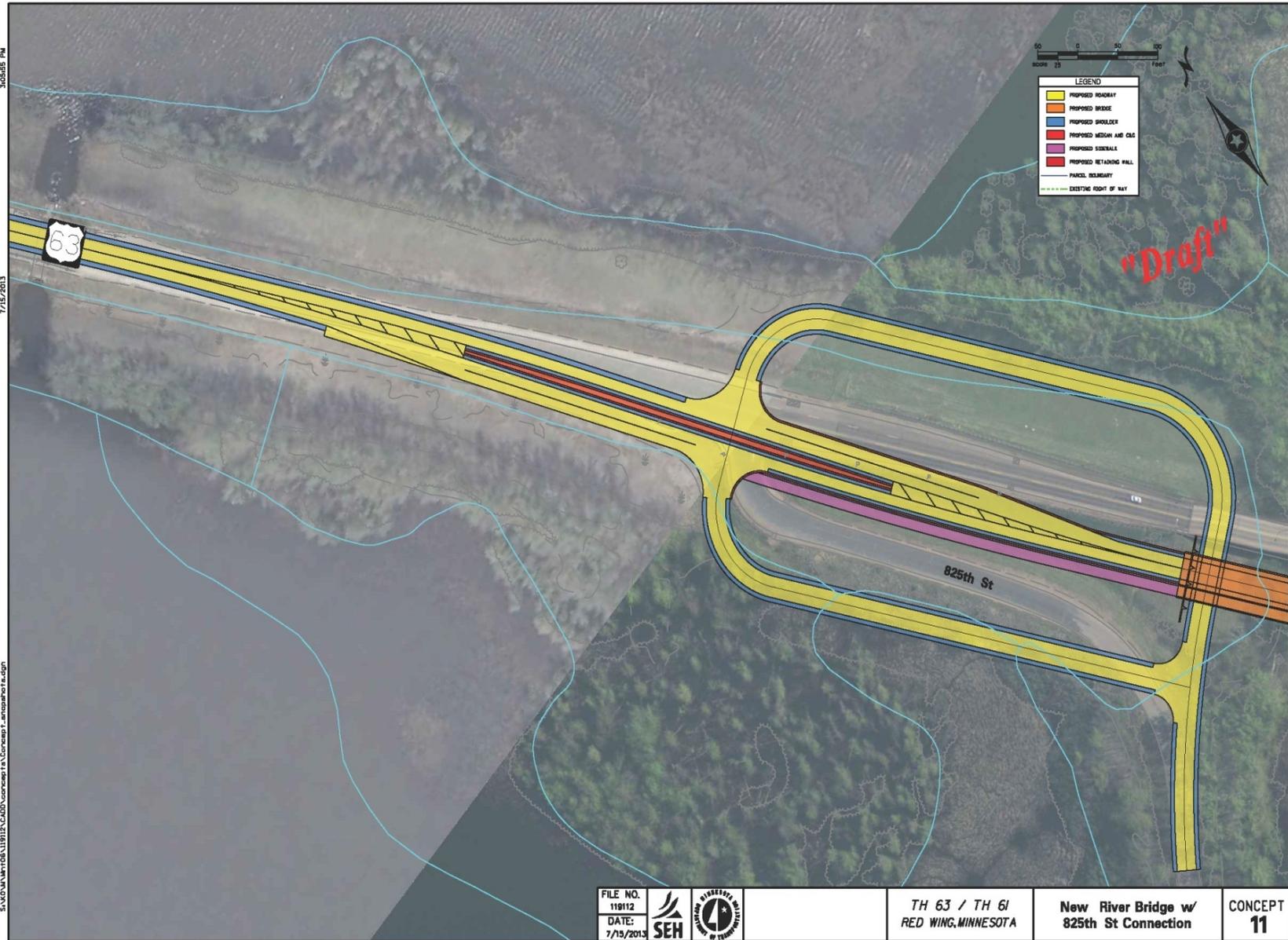


What's Been Accomplished (cont...)

- Completed Bridge 9103 Rehabilitation Study;
- Identified a recommended river crossing bridge type *(details to follow....)*;
- Identified a recommended alternative for the Wisconsin approach



Wisconsin Approach – Preferred Option



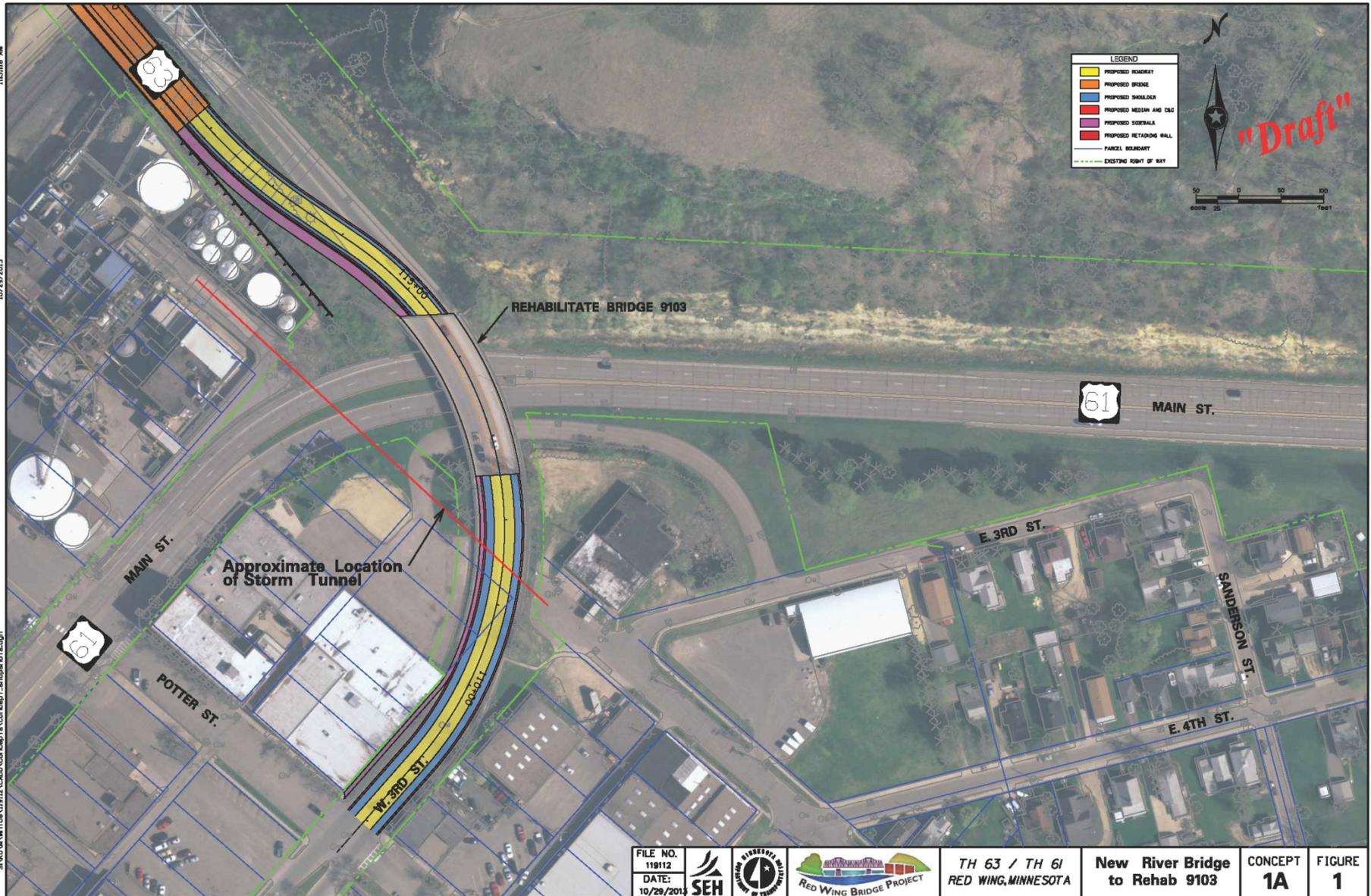


Minnesota Approach Alternatives – Evaluation Progress

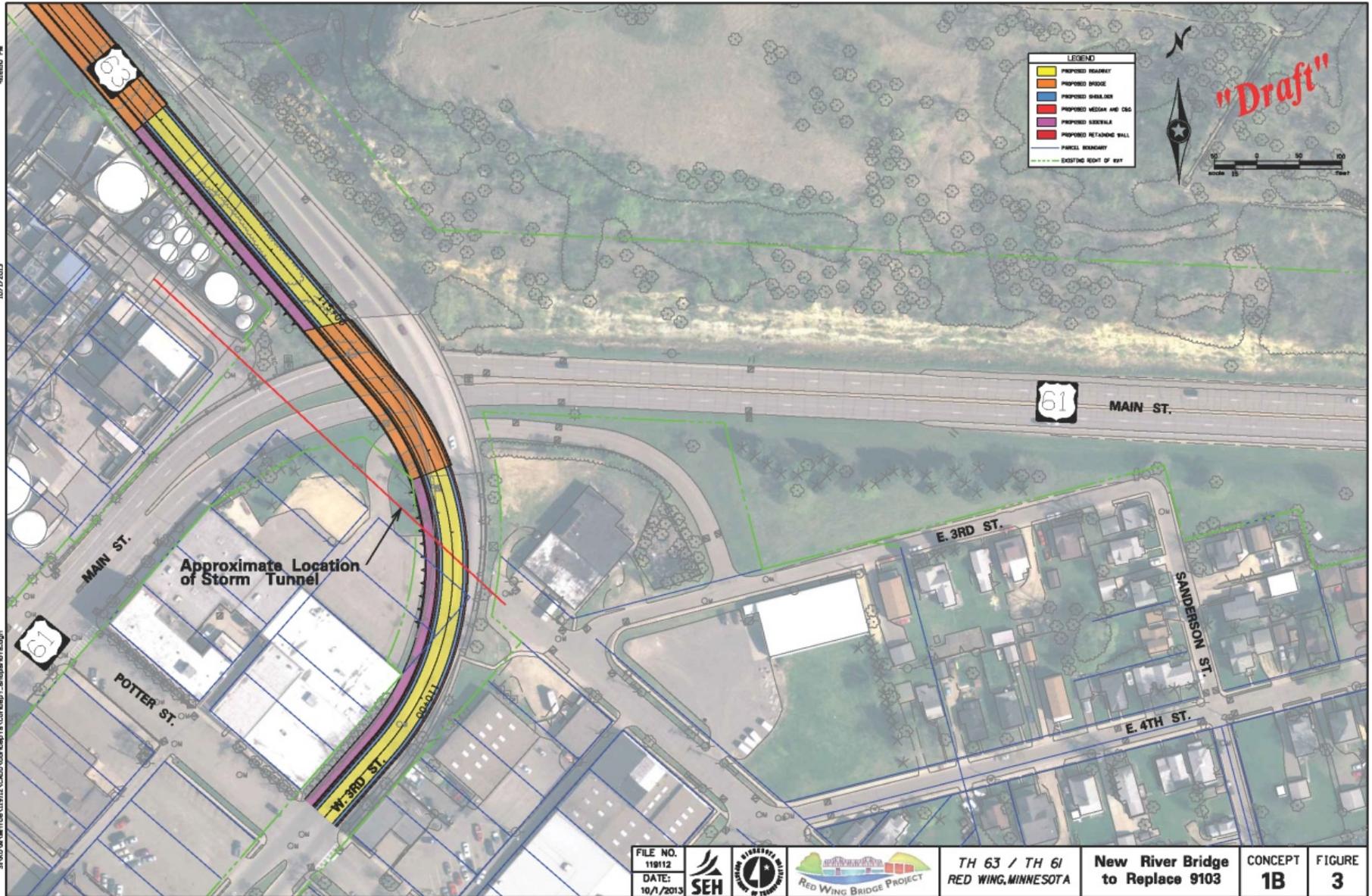
- Completed the Bridge 9103 Rehabilitation Study;
- Identified and completed an initial screening of a range of options;
- Three options were carried forward;
- Conducted a comprehensive evaluation of the remaining options in coordination with FHWA



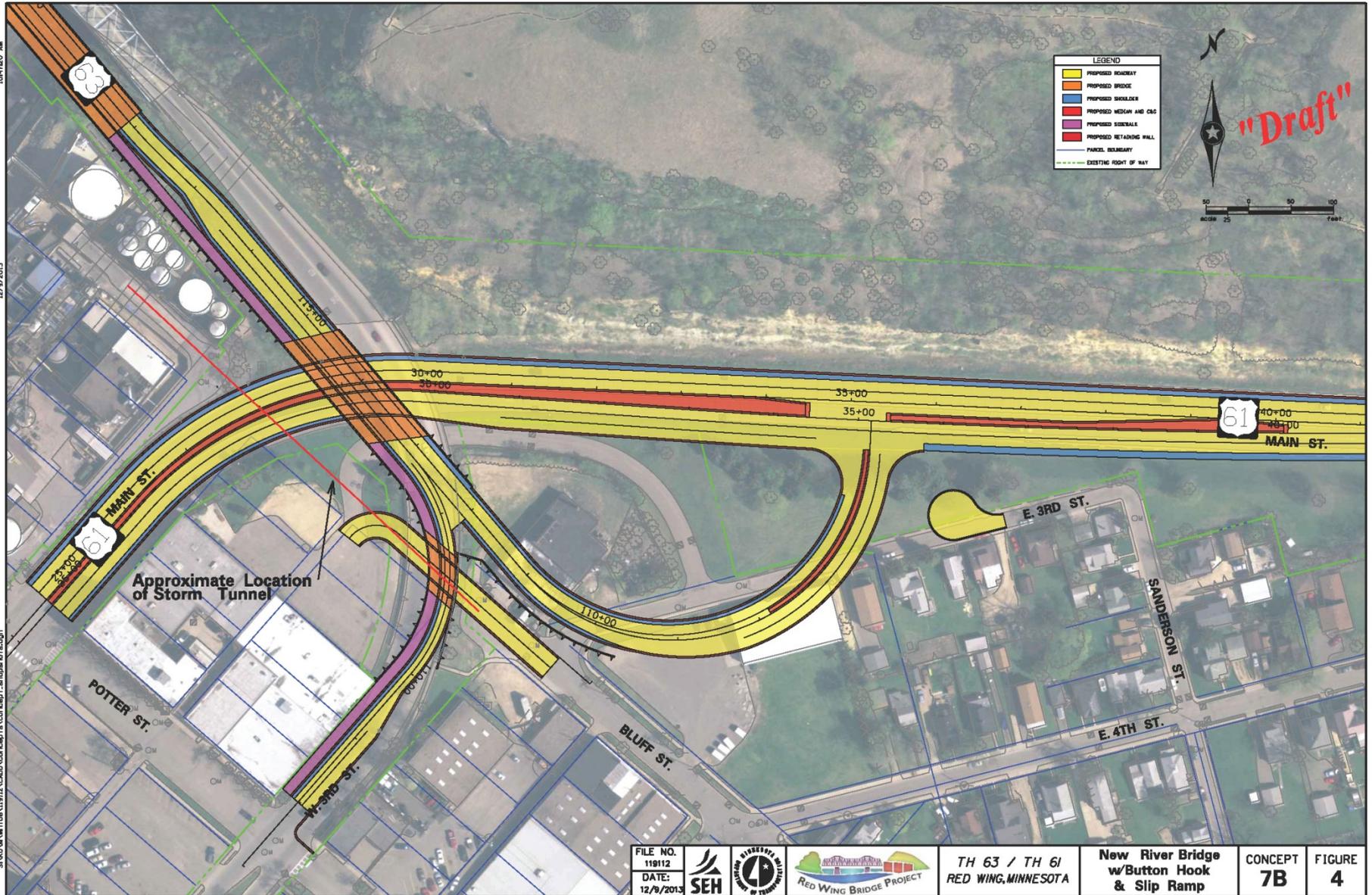
Rehabilitate Bridge 9103



Replace In-place



Buttonhook



FILE NO.
119112
DATE:
12/9/2013



Red Wing Bridge Project

TH 63 / TH 61
RED WING, MINNESOTA

New River Bridge
w/Button Hook
& Slip Ramp

CONCEPT
7B

FIGURE
4



Minnesota Approach Alternatives – Next Steps

- Coordinating with local and national FHWA staff to ensure full and fair consideration of all factors;
- Complete technical evaluation;
- Obtain public input;
- Identify recommended option(s) to carry forward into the EA process





River Crossing Bridge Type Evaluation

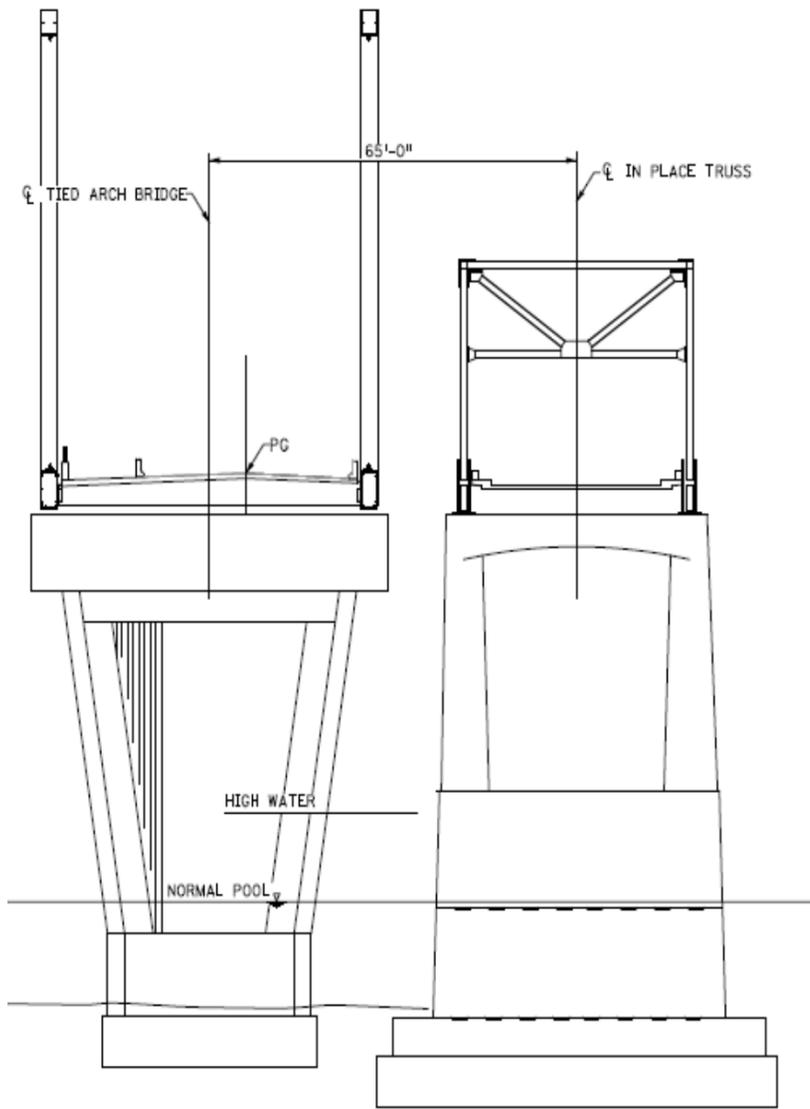




Tied Arch

- Grade and Profile
- Span Arrangement
- Constructability
- Inspection and Maintenance

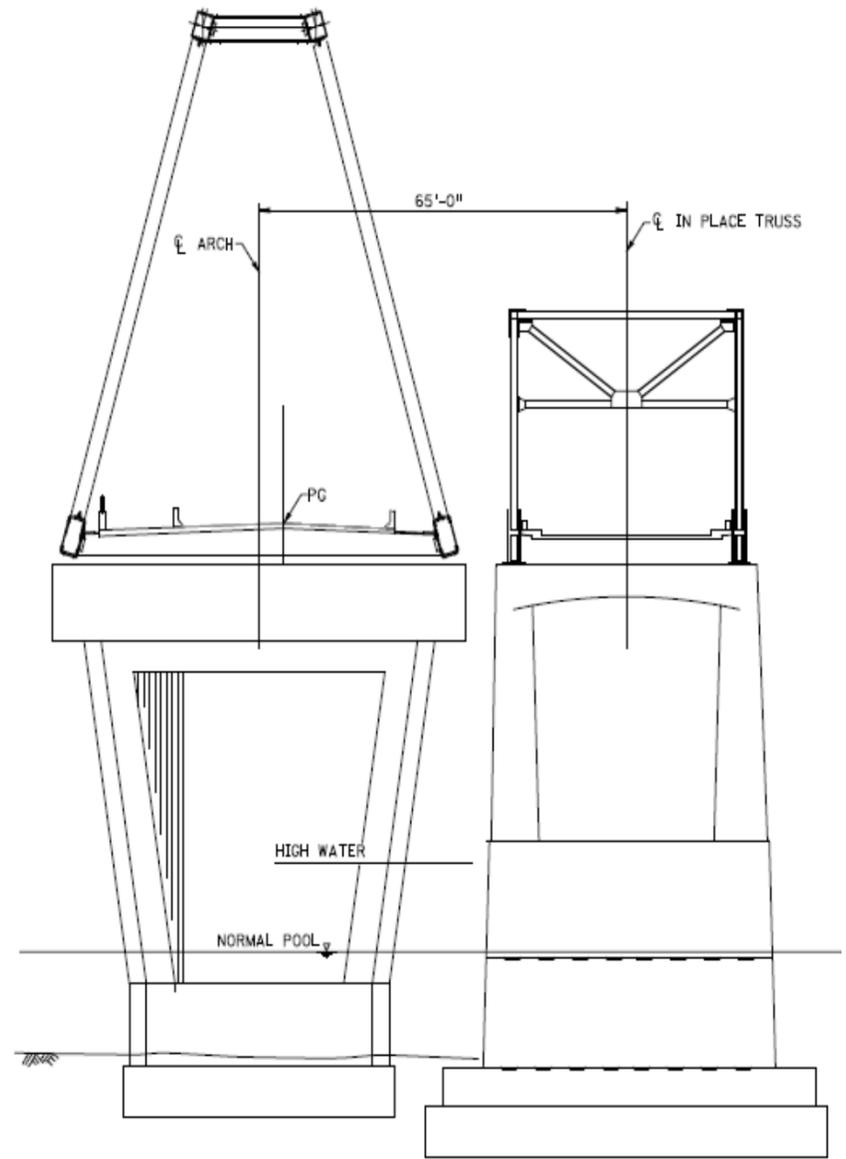




PROPOSED PIER 2 ELEVATION

EXISTING PIER 2 ELEVATION

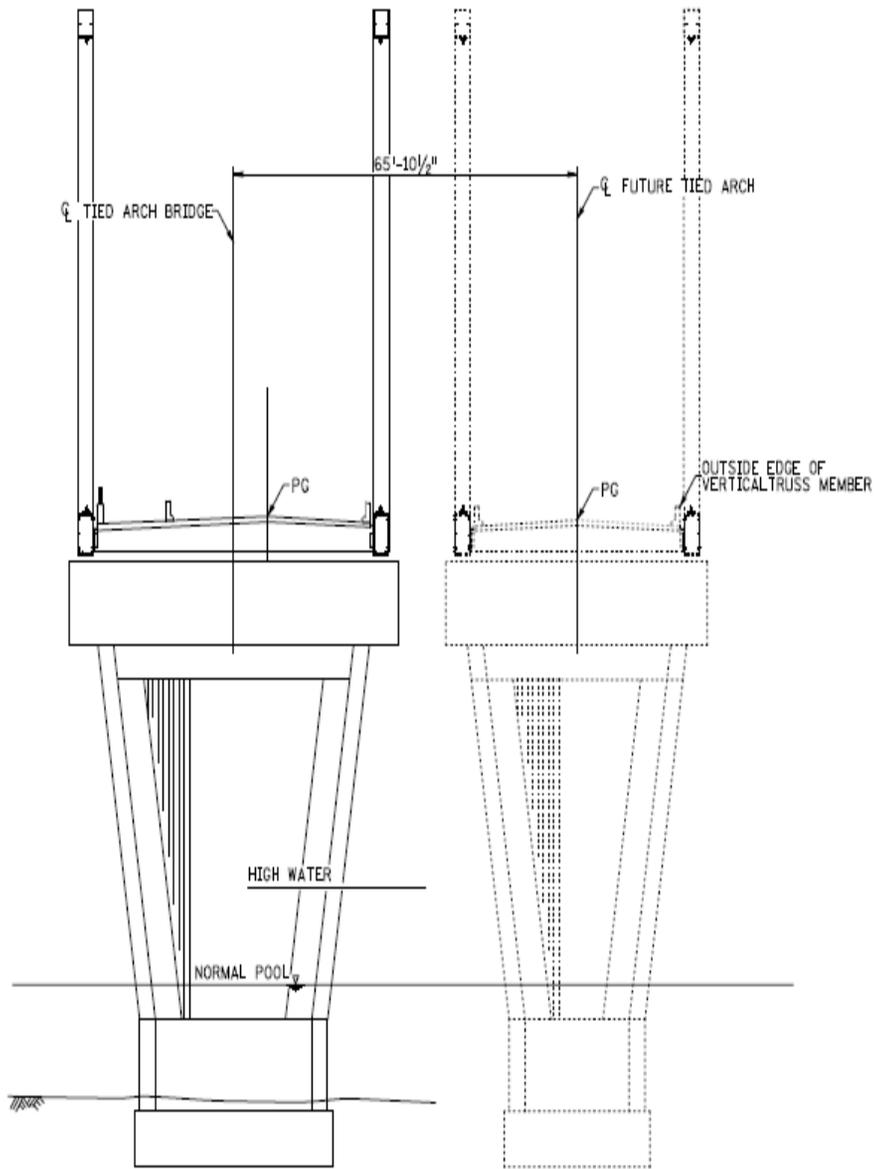
VERTICAL TIED ARCH SHOWN ADJACENT TO IN PLACE TRUSS



PROPOSED PIER 2 ELEVATION

EXISTING PIER 2 ELEVATION

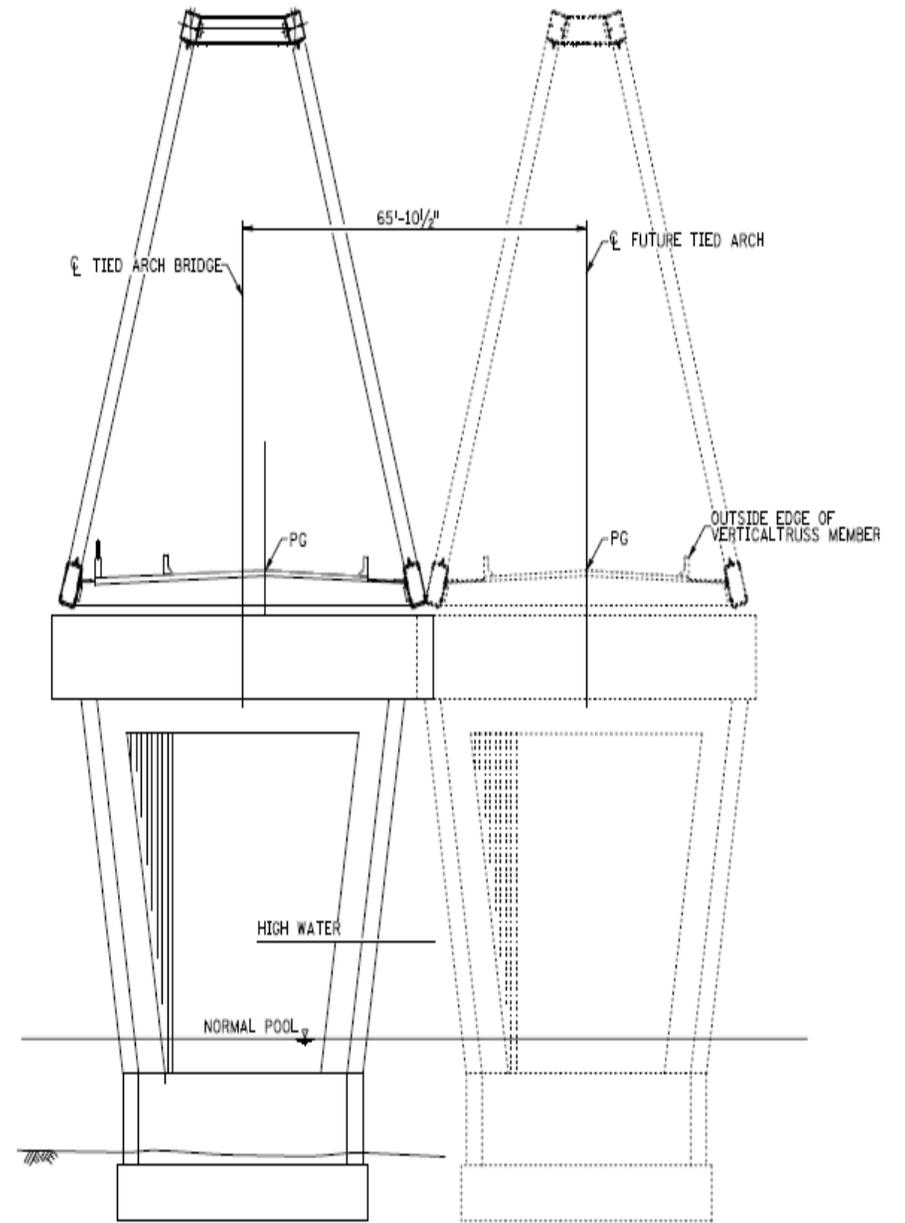
BASKET HANDLED TIED ARCH SHOWN ADJACENT TO IN PLACE TRUSS



PROPOSED PIER 2 ELEVATION

FUTURE PIER 2 ELEVATION

VERTICAL TIED ARCH



PROPOSED PIER 2 ELEVATION

FUTURE PIER 2 ELEVATION

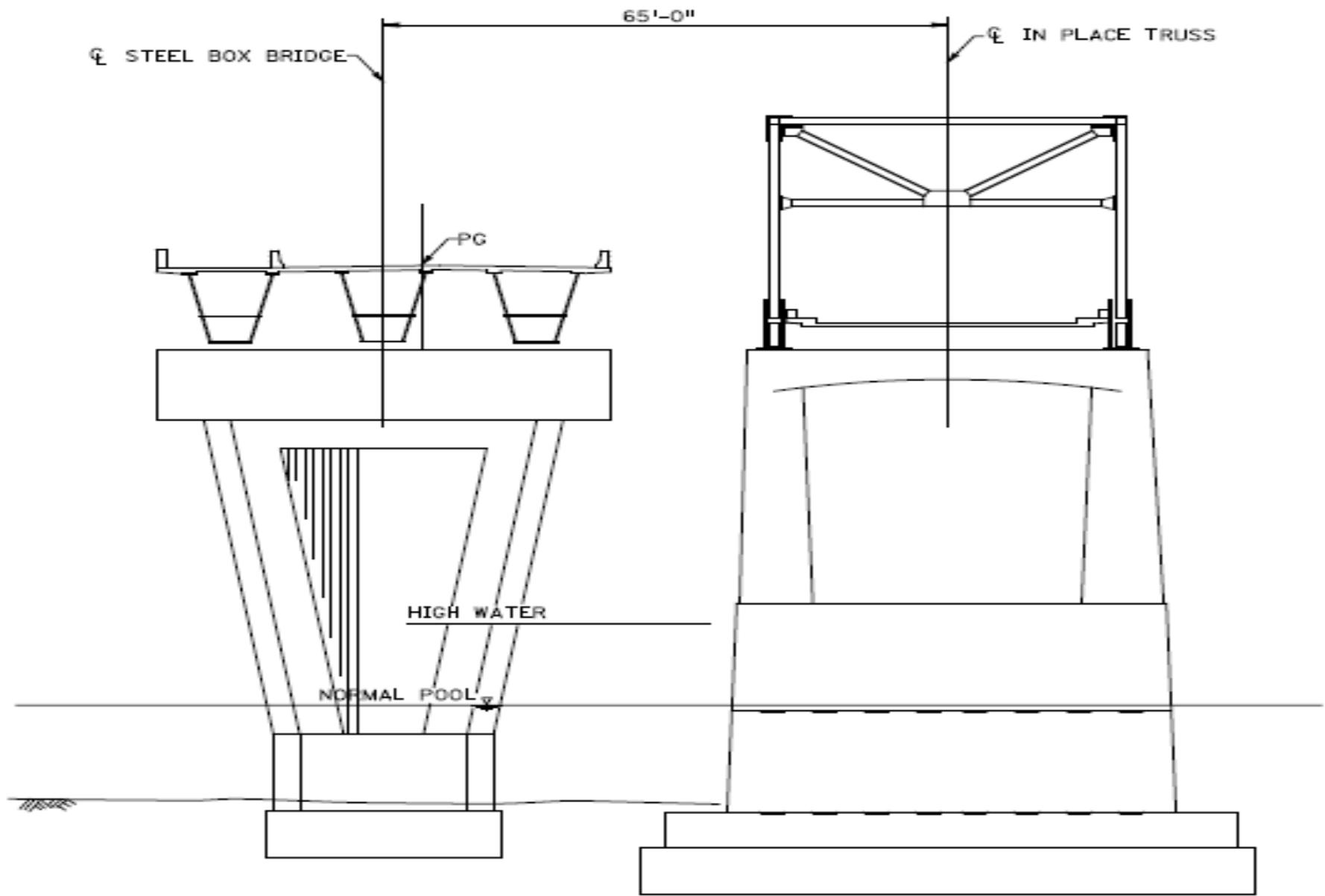
BASKET HANDLED TIED ARCH



Steel Box Girder

- Grade and Profile
- Span Arrangement
- Constructability
- Inspection and Maintenance

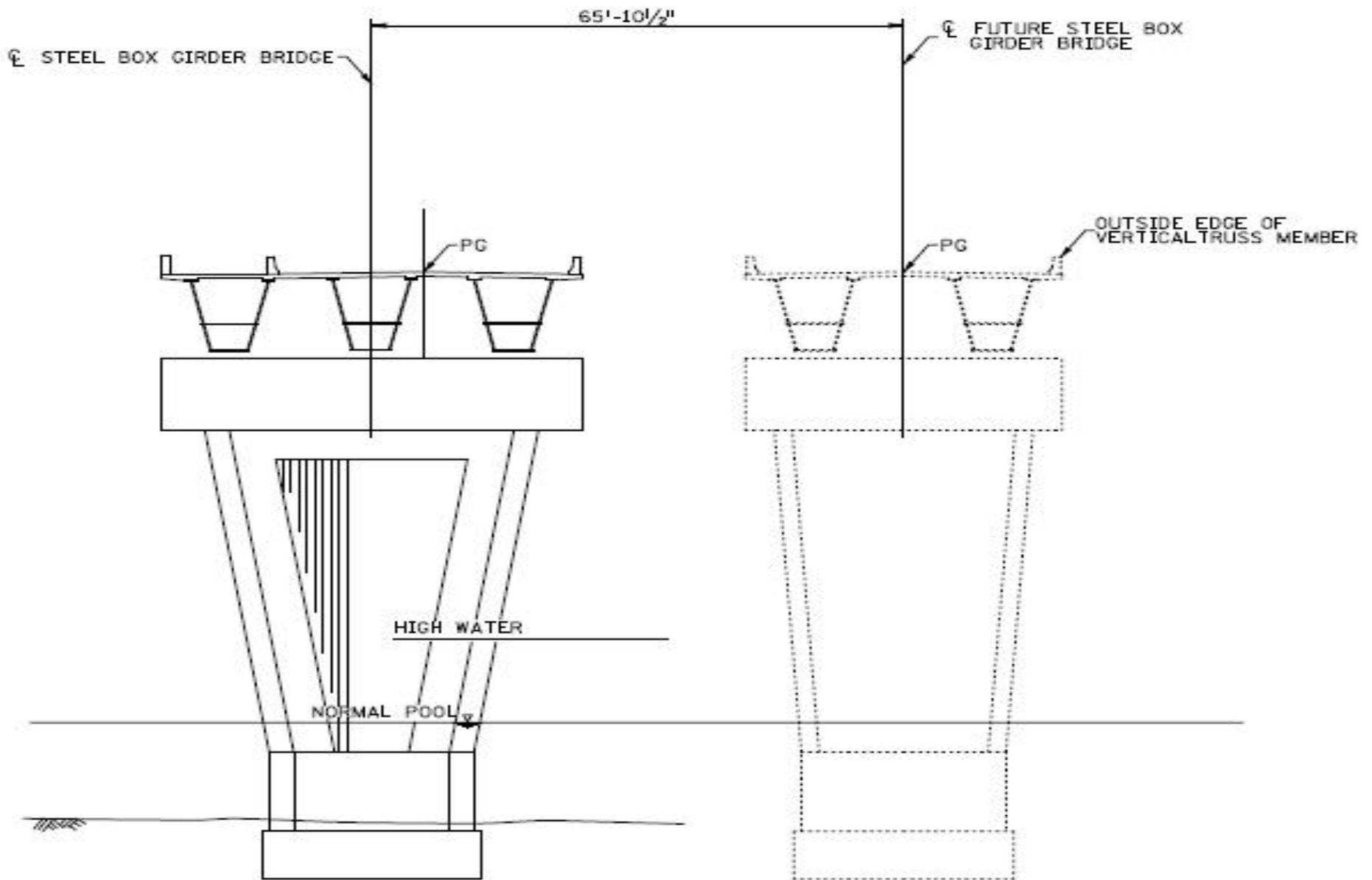




PROPOSED PIER 2 ELEVATION

EXISTING PIER 2 ELEVATION

STEEL BOX GIRDER SOWN ADJACENT TO IN PLACE TRUSS



PROPOSED PIER 2 ELEVATION

FUTURE PIER 2 ELEVATION

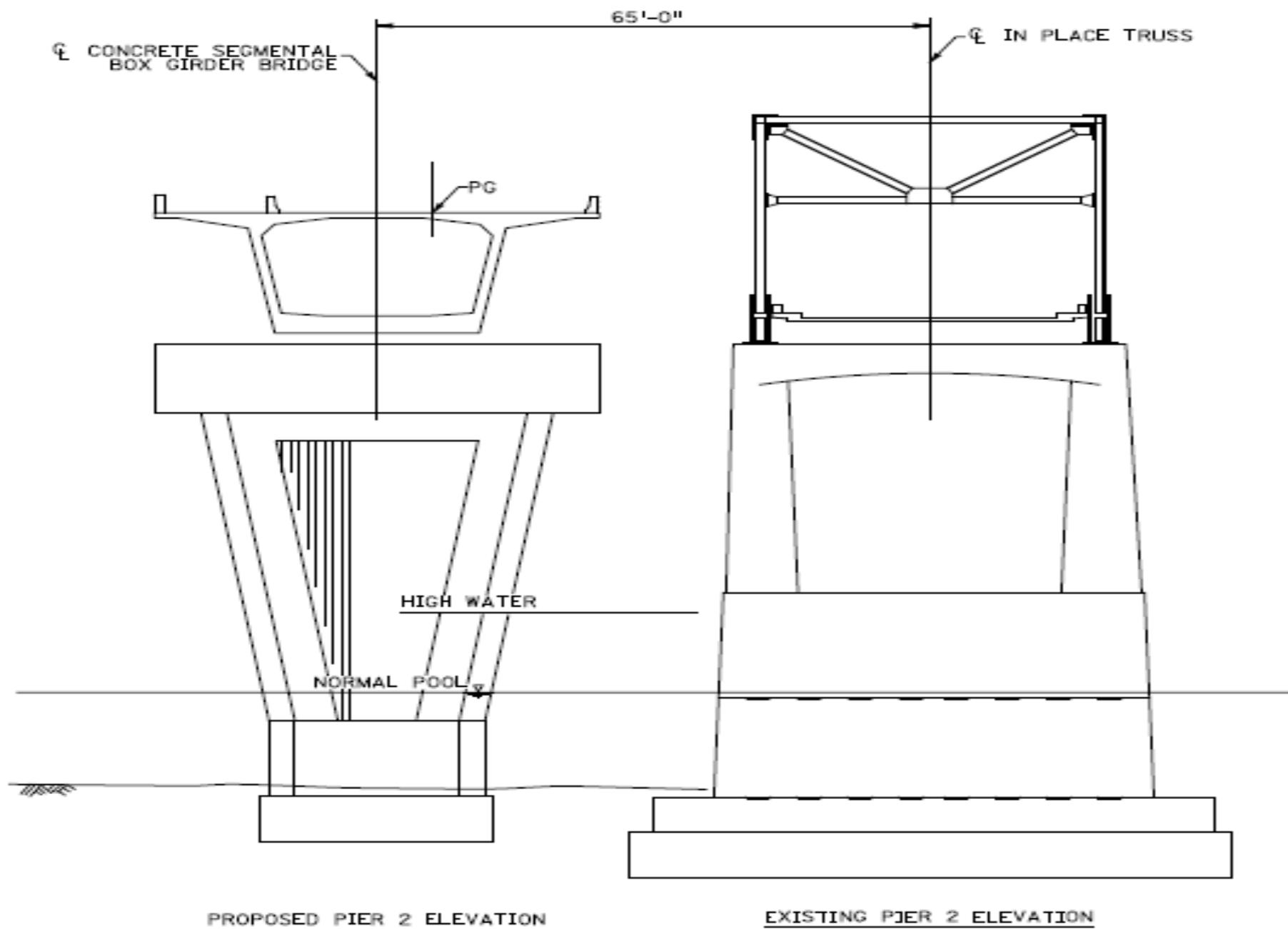
STEEL BOX GIRDER



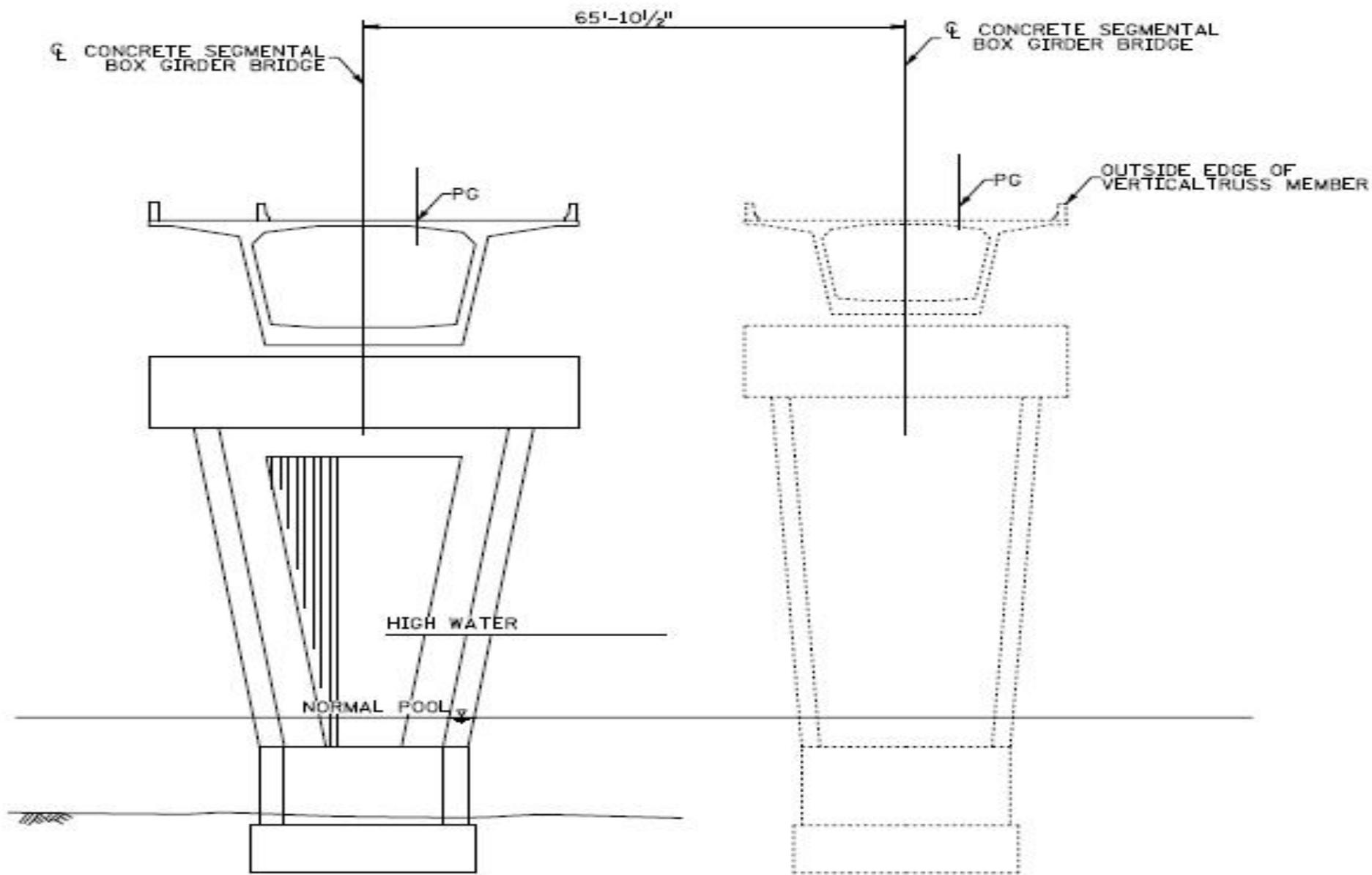
Segmental Concrete Box Girder

- Grade and Profile
- Span Arrangement
- Constructability
- Inspection and Maintenance





SEGMENTAL CONCRETE BOX GIRDER SHOWN ADJACENT TO IN PLACE TRUSS



PROPOSED PIER 2 ELEVATION

FUTURE PIER 2 ELEVATION

SEGMENTAL CONCRETE BOX GIRDER



River Crossing- Technical Findings

Tied Arch



Advantages

- Shallow structure depth

Disadvantages

- Potential volatility of steel prices
- Highest construction cost
- Highest maintenance costs
- Inspection more difficult





River Crossing- Technical Findings

Steel Box Girder



Advantages

- Conventional construction
- Relatively straight forward inspection
- Opportunity for color enhancement
- Modest profile impacts (particularly as compared to concrete segmental)
- Construction cost is nearly as low as the concrete segmental (within 2%)

Disadvantages

- Potential volatility of steel prices
- Requires repainting





River Crossing- Technical Findings

Concrete Segmental Box Girder



Advantages

- Complex erection is not required
- Relatively straight forward inspection
- Lowest long term maintenance costs
- Lowest construction cost

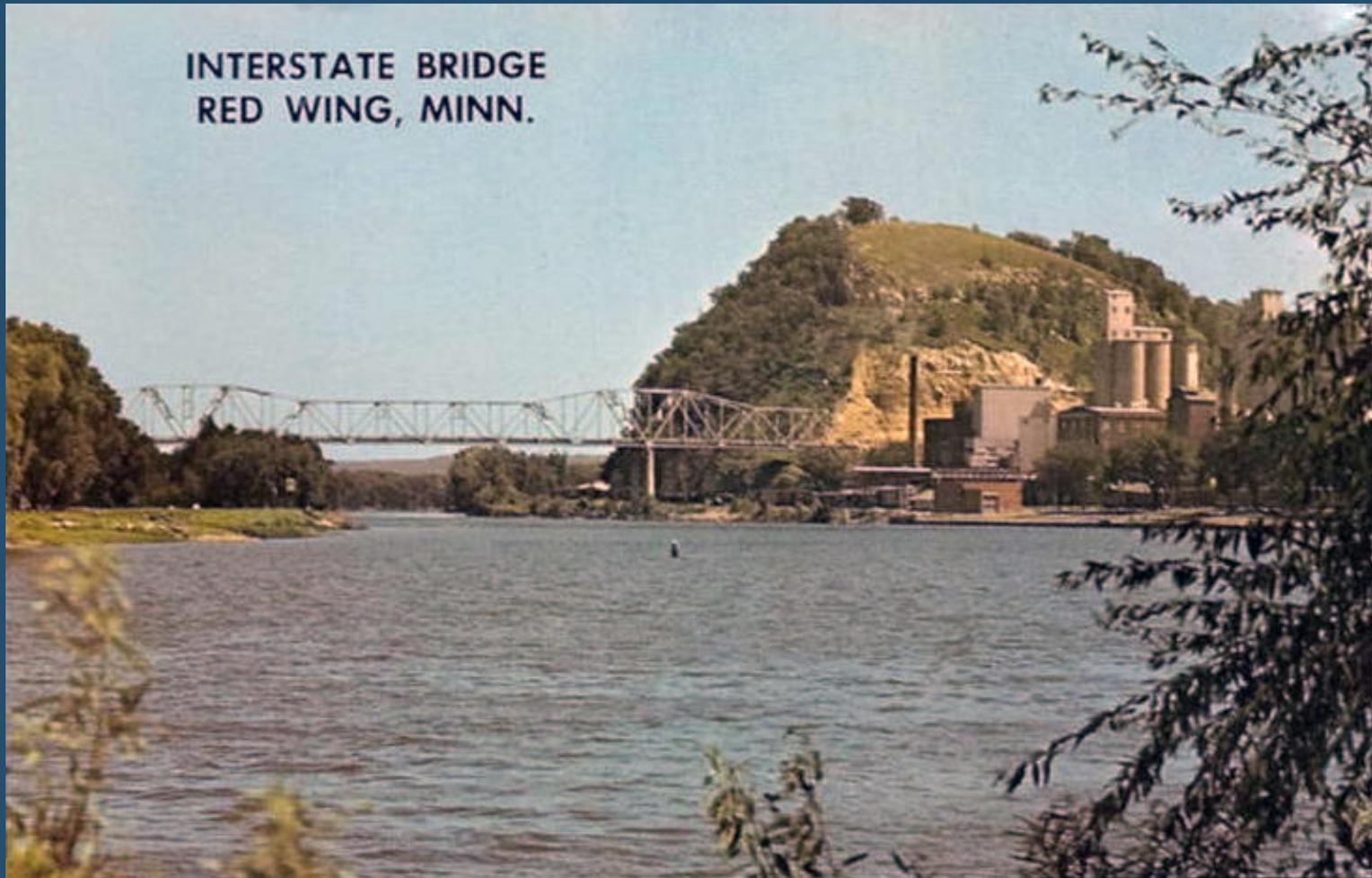
Disadvantages

- Requires substantial profile increase
- Reduced opportunities for color enhancement
- Greatest structure depth
- Longest distance at maximum grade



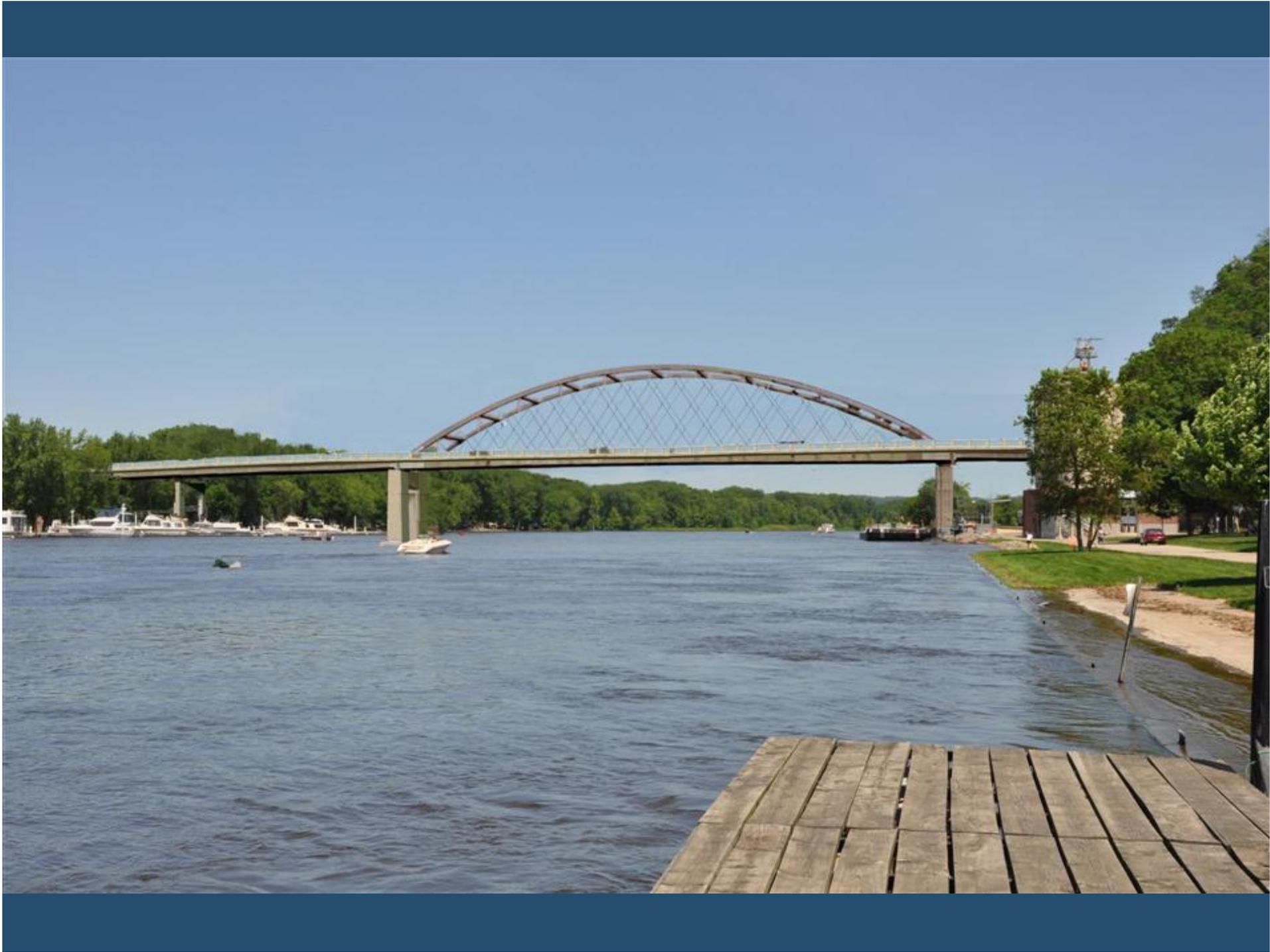


Historic Aesthetic Considerations







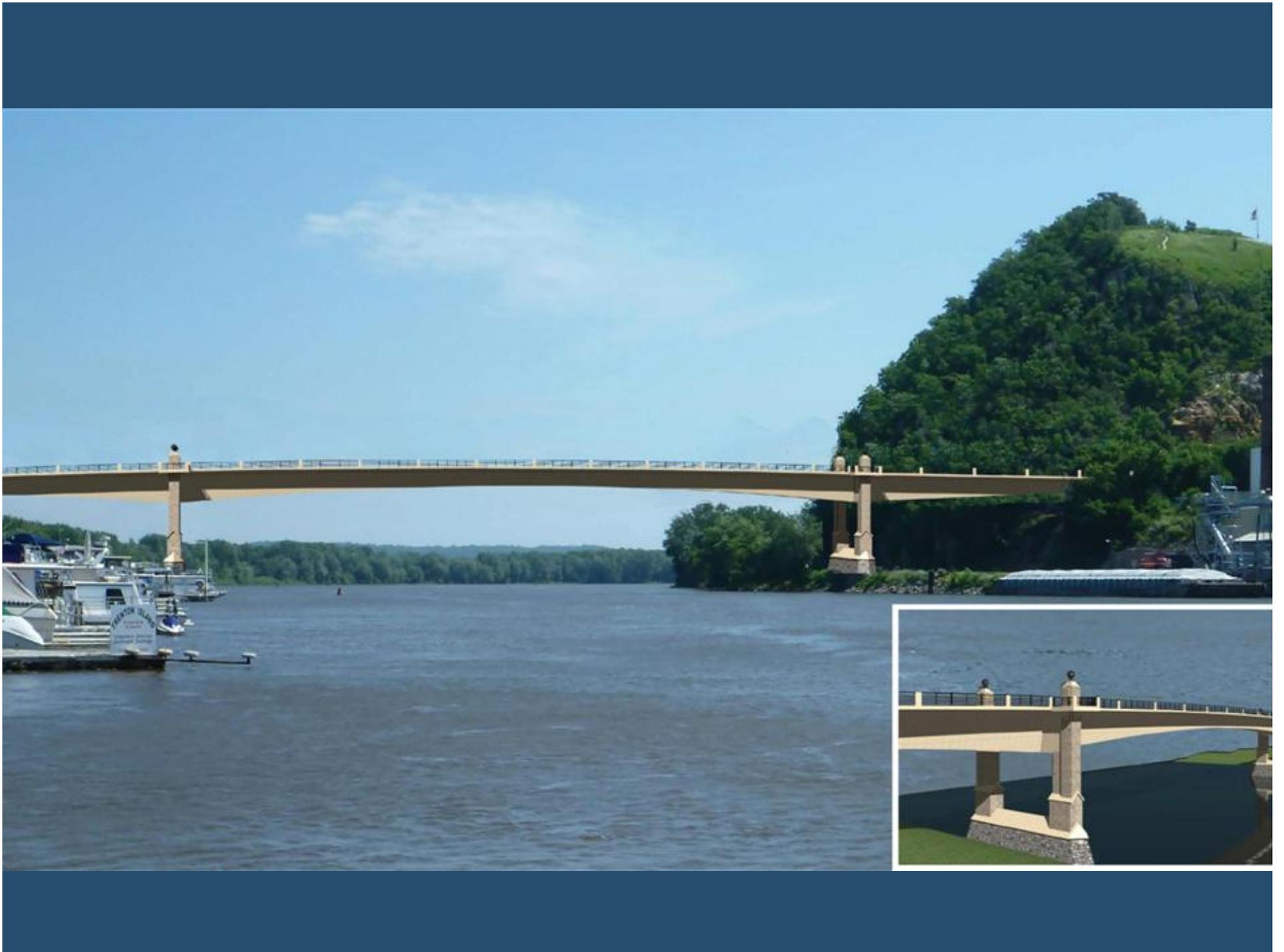












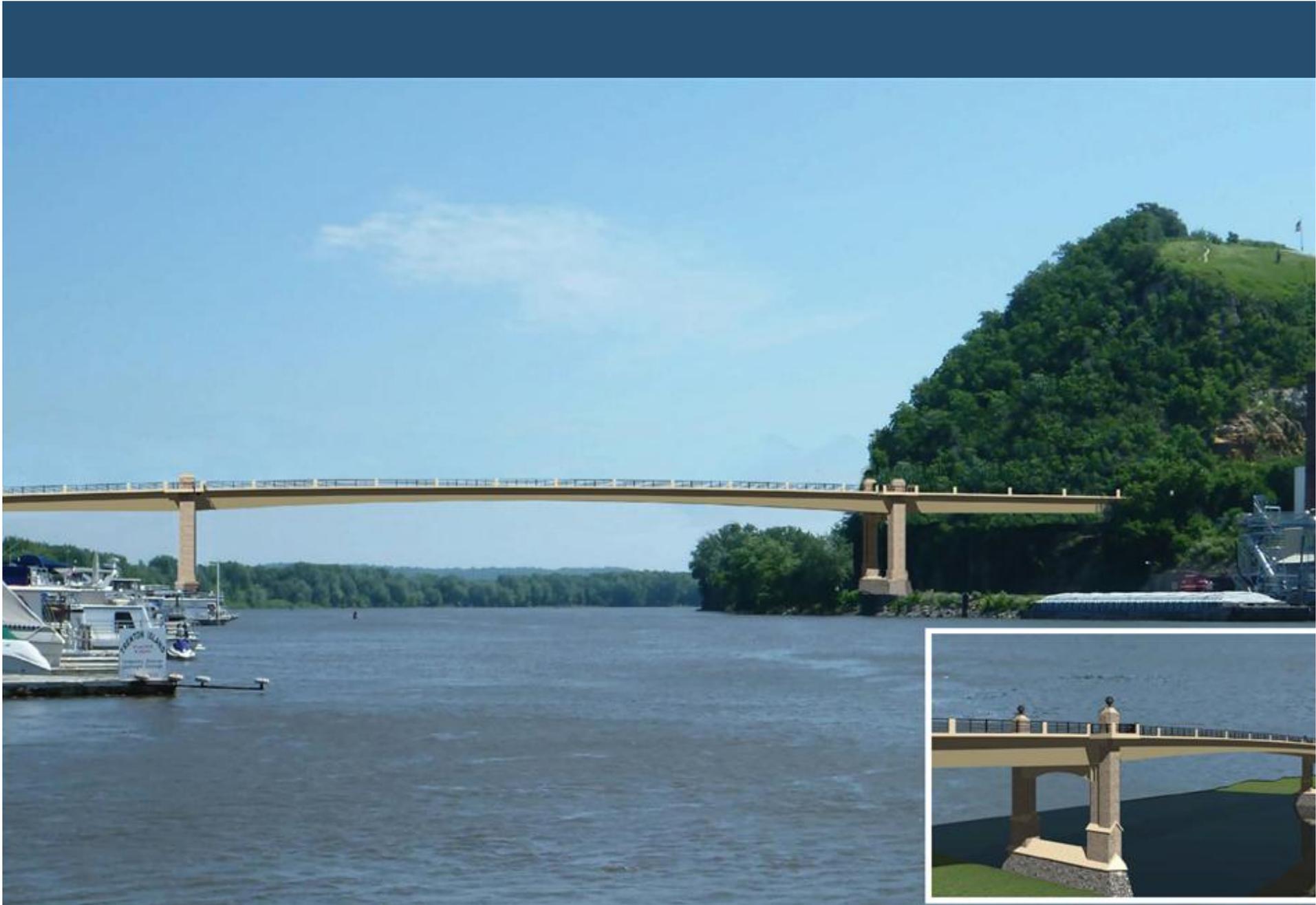




photo by: Skyline X



photo by Padriac Ryan



River Crossing - Recommendation

Recommended Alternate: Steel Box Girder





Environmental Assessment (EA)

- Detailed impact assessment process addressing federal and state requirements;
- One or more “build” alternatives may be evaluated;
- Considers full range of social, economic and natural environmental issues;
- Continued opportunities for stakeholder involvement;
- Concludes with identification of preferred alternative to advance to detailed design and construction





Visual Quality Process

- Conducted during preparation of the EA;
- Prescribed process centered on engaging community stakeholders;
- Primary outcome will be a plan defining the aesthetic elements of the project (i.e. bridge color, lighting, railings, pier design, etc...);
- More details regarding the process will be provided at the next PAC and TAC meetings





Public Outreach Update

- Listening Session #4 - November 2013
- City Council presentation – November 2013
- Open House #3 – March 2014 (tentative)
- Newsletter #3 – to be issued prior to Open House #3
- Project Presentation Opportunities
- Website: <http://www.dot.state.mn.us/d6/projects/redwing-bridge/index.html>





Next Meetings

- February 20th TAC #11 - 1:00 p.m. to 3:00 p.m. – Red Wing Library
- March 20th PAC #8 - 1:00 p.m. to 3:00 p.m. – Red Wing Library





Questions / Comments



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