Iowa DOT Electronic Construction Collaboration Project

- Jim Nelson – Iowa DOT
- Aaron Zutz – Iowa State University
- **Type of communication – Post-letting**
  - Plan Revisions
  - Shop Drawings and Working Drawings
  - RFI, RFC, VE proposals, etc.

- **Contract requirements**
  - VE proposals
  - Shop Drawings and Working Drawings
  - RFI
Why use a web based collaboration system?

- Updated DOT strategic plan
  - Guiding principles of agency
    - Transparency
    - Outstanding Service
      - Improve internal and external customer service
  - Project complexity and frequency
Complex Bridge Projects

24th Street Bridge

I-80 over Missouri River
Why use a web based collaboration system?

- Updated DOT strategic plan
  - Guiding principles of agency
    - Transparency
    - Outstanding Service
      - Improve internal and external customer service
- Project complexity and frequency
- Sustainability
- Liability
Early Efforts

- **Two DOT Pilot Projects**
  - I-80 Bridge over Missouri River
  - US-52 over ICE RR and Mill Creek
Jackson 108 Pilot Project

Jackson 108 - U.S. 52 Over ICE Railroad and Mill Creek

Proposal
- Estimating Proposal
- Railroad data sheet

Plans
- 45-0521-071
- 45-0521-071C01
- 45-0521-080
- 45-0521-082 X-SEC

Addendums
- Addendum_Tfios808_a01
- Addendum_Tfios808_a02

Special Provisions
- Special Provisions for Vibration Monitoring
- Special Provision for Mass Concrete: Control of Heat of Hydration
- Special Provisions for Work on Railroad Right-of-Way (Iowa Central and Eastern Railroad)

Developmental Specifications
- Developmental Specifications for Colored Stabilized Gravel for Structural Concrete
- Developmental Specifications for Compaction with Moisture Control
- Developmental Specifications for Disc Rebar Assembly
- Developmental Specifications for Construction Progress Schedule
- Developmental Specifications for Mechanically Stabilized Earth (MSE) Retaining Wall
- Developmental Specifications for Earth
Research by Iowa State

- Identification of functional needs
- Investigation of commercial solutions
- Assistance in solution selection
- Support of pilot projects
Identification of Functional Needs

- Technical Advisory Committee
- Interviews
  - Iowa DOT
  - Consultants
  - Contractors
  - Suppliers
  - Other state DOT’s
  - Commercial Construction
Identification of Functional Needs

- Functional Needs:
  - Online web-based solution
  - Specifically design for construction
  - Workflow meets current Iowa DOT workflow
  - Designed for user friendliness
  - Vendor Hosted
  - Customization of system to meet Iowa DOT needs
Evaluation of Solutions

- Identified over 40 solutions
- Evaluated:
  - Websites
  - Web demonstrations
  - Other users
- Short-listed 12 solutions for further evaluation
Commercial Solutions

- Functionality
- Hosting
- Cost
- Licensing
- Training
- Other key features
Solution Selection & Implementation

- Selected solution using a Request For Proposals process
- ISU worked with Iowa DOT to develop RFP based on results of research
- Initial Implementation on two projects
  - Broadway Viaduct
  - Iowa Falls Arch Bridge
Conclusion

- Future Implementation
- Benefits
  - Organizational
  - Statewide
Questions?