GRE-235-03.14: UNIQUE PROJECT DELIVERY FOR PRIVATELY FUNDED BRIDGE ON AN OHIO STATE ROUTE

Ohio Transportation Engineering Conference (OTEC)

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PRESENTATION OVERVIEW

- Project background and goals
- Project design / inspection team
- Unique project aspects and contractor selection
- ODOT permit review process, construction challenges and details
- Project summary, pictures, video and questions
PROJECT TEAM

- LJB, Inc.
  - Fairborn Cement Company
  - Geotechnology, Inc.
  - Resource International Inc.
  - Prime AE Group, Inc.
  - Utilities (DP&L & AT&T)
  - Greene Co Eng. Office
  - ODNR – MSHA Training

- ODOT
  - District 8 Office of Permits
  - Office of Geotechnical Engineering
  - Office of Materials Management

- Eagle Bridge
  - Selected contractor
GRE-235-03.14 BRIDGE LOCATION
Project scope and goals

- Access to FCC future eastern quarry
- Safety – FCC not use public roads
- Construct bridge on SR-235 to facilitate a new quarry haul road beneath
- Bridge to conform to all ODOT standards
- Cost efficient bridge solutions
- Construction completed in 2018
Project timeline

- June 8, 2016 – First meeting with LJB and FCC
- February 28, 2017 – Preliminary engineering report to FCC
- June 2, 2017 – Stage 1 plans to ODOT Office of Permits
- September 7, 2017 – FCC/LJB first meetings with 4 contractors
- October 2, 2017 – Stage 3 plans to ODOT Office of Permits
- January 26, 2018 – FCC/LJB second meetings with 4 contractors, including project site visits
Project timeline (continued)

- February 8, 2018 – Final plans to ODOT Office of Permits
- February 26, 2018 – Bid documents to 4 select contractors
- March 14, 2018 – FCC/LJB received contractor bids
- March 27, 2018 – FCC awarded project to Eagle Bridge
- April 23, 2018 – S.R. 235 closed to traffic / construction begins
- November, 2018 – Estimated construction completion date
Project specifics:

> Project length = 520 feet (road closure - traffic detour)

> Single span (145 feet) wide flange prestressed I-beam with composite concrete deck on semi-integral abutments

> Spread footings on underlying **stabilized** bedrock

  • Rock bolts and non-tensioned dowels
  • Geobrugg Tecco wire netting on top fractures layer
  • Shotcrete entire rock face beneath abutments
UNIQUE PROJECT DELIVERY
PERMITTING REVIEW PROCESS

- Office of Permits Application:
  - MR505
PERMITTING REVIEW PROCESS

- Privately Funded Milestones:
  - NEPA Involvement not required, no state or federal funds
  - NOI filed with Ohio EPA from Fairborn Cement
PERMITTING REVIEW PROCESS

- Privately Funded Milestones:
  - Public Information
    - Media notifications-OHGO, Facebook, Twitter & Email
    - News releases to local newspaper
  - Public Involvement-Phone Calls & Emails
  - Feasibility Study developed between LJB, Fairborn Cement & ODOT for review
PERMITTING REVIEW PROCESS

- **Easement & Utility Relocation:**
  - SH-Standard Highway Easement donated to ODOT once project is complete
  - Utility Easement given by Fairborn Cement for electric, cable tv & telephone
EASEMENT LINE MOVED AFTER CONSTRUCTION
PERMITTING REVIEW PROCESS

- Performance Bond Required
  - Prevailing Wage Cost Estimate* 1.3 factor
  - Guarantee if project not complete
  - Bond released 1 year after punch list is complete
PERMITTING REVIEW PROCESS

- Maintenance Agreement
  - Agreement #31649 est., Fairborn Cement to maintain bridge for duration of business
  - ODOT D8 Bridge Inspection reports provided annually to Fairborn Cement Company
MINERAL RIGHTS

- Mineral Rights Verification of Limestone Rock under SR 235:
  - No mineral rights for Standard Highway Easement
  - Fairborn Cement owns minerals
  - Fairborn Cement supplied cement to construct the bridge
UNDER PASS HEIGHT & WIDTH

35’-0” Req. Min VertClr
35’-1 11/16” Actual Min VertClr
2 LANE HAUL RD UNDER PASS

- 90 ft. wide haul road designed to run 2-Cat. 775 F dump trucks side by side

Height=14.5 ft
Width=17.7 ft
Bed Height- 30’-4”

Load Capacity- 54.8 yd3
CONSTRUCTION CHALLENGES

- Rock Wall Challenges
  - Laminated rock layer near the top of slope face, safety concern for laborers
  - Plan sheets revised to detail the proposed Tecco wire mesh to secure the laminated rock
  - Plan sheets revised to show the updated rock bolt locations and rock weep holes
CONSTRUCTION CHALLENGES

- Geobrugg Tecco Mesh
SCHEDULE CHALLENGES

○ Critical Path Activities:

   ○ Set Beams-September 18
   ○ Pour Deck- October 23
   ○ Slip Form Parapets- November 7
   ○ Pave Asphalt- November 23
Consortion

- Rock blast & Rock fracture

16 production shots req. to blast away rock for haul rd.
CONSTRUCTION

- Rock Bolt Drilling
CONSTRUCTION

- Rock Bolt Drilling Video
CONSTRUCTION

- 24” Wide Geocomposite Board between Rock Bolt Columns & Tecco Mesh
CONSTRUCTION

- 24” Wide Geocomposite Drainage Board to capture seepage
CONSTRUCTION

- Shotcreting Video
CONSTRUCTION

- Shotcreting
PROJECT PICTURES
TIME-LAPSE VIDEO

Music: “T.N.T.,” written by Angus Young, Malcolm Young and Bon Scott
THANK YOU & FOR MORE INFORMATION

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