2016 TEAM Conference

Waverly Road Progressive Design Build Project
Owner: City of Edgerton, KS

March 10, 2016
Project Location
Project Location

BNSF
LPKC
BNSF Transcon Tracks
BNSF Intermodal Lead Trucks
Gardner, KS
Waverly Road
Edgerton, KS
Owners
Beth Linn, City Administrator
Kenny Cook, Community Development Director
David Hamby, City Engineer (BG Consultants, Inc.)

Design Build Team

Clarkson Construction Company
Tom Kellerman, P.E. – Chief Engineer – Project Sponsor
Pat Weaver, P.E. – Project Manager
Randy Smith, P.E. – Structures Manager

Design Team

HDR
Cory Imhoff, P.E. – Design Manager
Simon Sun, P.E. – Roadway Design Lead
Chad Hall, P.E. – Structures Design Lead
Shannon McCauley, P.E. – Railroad Liaison

Subconsultants
Renaissance Infrastructure Consultants
Braun Intertec
Terra Technologies
Progressive Design Build Process
Delivery Phases

1. Qualifications Phase
   • Statement of Qualifications
   • Shortlist
   • Interview
   • Selection

2. Guaranteed Maximum Price (GMP) Development Phase
   • Collaborative Design and Estimating
   • Setting Scope and Schedule of Project
   • Advance Permitting, Utility Relocation and Right of Way Acquisition
   • Setting Guaranteed Maximum Price for Project Scope (30% plans)

3. Final Design & Construction
   • Project segmentation
   • Developing 100% plans for owner review and approval
   • Finalize Right of Way Acquisition
   • Finalize Utility Relocation
   • Finalize Permitting
   • Release for Construction Documents
   • Construction
Project Schedule

- November 2014: RFQ
- December 2014: Shortlist/Interview
- January 2015 to March 2015: Pre-GMP Design & Estimating
- April to July 2015: Final Design
- April 2015 to May 2016: Construction
1. Qualifications Phase
RFP/RID Alignment Over Existing & Future BNSF IMF Tracks

- Impacts KCP&L Wetlands Parcel
- Position Relative to BNSF Lead Track Monitoring Equipment
- Complicates Intersection at 183rd Street
- Required Steel Plate Girders
Permitting

- Wetland & Conservation Corridor Impacts
- DWR, COE, KDWP, KDHE, USFWS
- FAA 7460 for Lights on Bridge & Cranes
- Schedule Risk
Utilities

- KCP&L, Gardner Water, Gardner Electric, Water District 7, Century Link, Kansas Gas, BNSF
- Minimize Impacts
- City & Utility Staff Integral Part of Process
- Schedule Risk
Right of Way

- Quick Decisions
- City Leadership
  - Beth Linn
- Cooperation with North Point and BNSF
- KCP&L Wetland
- City of Gardner Boundary
- Mixed Results with Private Properties
  - Biggest challenge to project delivery
- Schedule Risk
Bridge Over Existing & Future BNSF IMF Tracks

- Avoid Impacts to KCP&L Wetlands Parcel to Maintain Schedule
- Stay on or Near Existing Alignment
- Use Precast Girders to Maintain Schedule
- Straddle Bent Required Over Future Lead Track (Square or Skewed?)
- Evaluate Longer Bridge to Avoid Culvert Replacement(s) & Additional Impacts
Waverly Road Profile Over BNSF

- RFP/RID 183rd Street Intersection Was A Concern
- Relocating 183rd Street Intersection Allows Tie In and Access to BNSF Water Storage Tank Entrance And Improved Intersection Geometry
- Profile Controlled by Straddle Bent & Future IMF Tracks
- High Fills Over Culverts vs. Increasing Bridge Length & Avoiding Culvert & Stream Impacts
- Fill Heights & Potential MSE Wall Strap Length Conflicts for Parallel Walls
Inverted Tee Straddle Bent

- Staged Post-Tensioning
- Inverted Tee Cap
- TxDOT Detailing Approach
- Good Alternative to a Framed Cap
- Simple Construction
- Can be Constructed Without Girders
Maintaining Access During Construction

- Waverly Road Closed to Through Traffic
- Temporary Surfacing to Maintain Access for BNSF, Developers, Contractors, Private Residents & Emergency Responders
- Segmentation and Use of Local Roads to Maintain Access for Everyone
2. GMP Development Phase
Setting Project Scope, Schedule and Price

- Weekly Task Force Meetings
  - Owner
  - Major Stakeholders
  - Designer
  - Contractor

- Communication is Key

- Decisions Made and Maintained

- Allows Priorities and Expectations for Project to be Aligned

- Develop 30% Plans
  - Contract Basis for Construction and Design Pricing

- Third Party / Independent Review of Pricing
GMP Development Phase is “The Advantage” of Progressive Design Build

- During GMP development phase
  - Advance Permitting
  - Advance Utility Relocation
  - Advance Right of Way Acquisition
- Owner involvement and decision making
- Working with single consultant and contractor
- Owner retention of GMP plans whether GMP contract is signed or not
- The owner, the contractor, and the designer are on the same page going into final design and construction
3. Final Design And Construction
Bridge Packages

S01A – Girders & Bearings
Waverly Road Bridge

S01B – Pier 1 Straddle
Waverly Road Bridge

S01C – Abutment 1 & 2
Waverly Road Bridge

S01D – Pier 2, 3, 4 & 5
Waverly Road Bridge

S01E – Deck, Barrier, Joints, Lights
Waverly Road Bridge
Roadway Packages

- R01 – G, D & P
  187th Street

- R02A – G & D
  South – Sta. 65 + 50 to Sta. 126 + 75

- R02B – G, D & P
  South – Sta. 65 + 50 to Sta. 110 + 00

- R02C – G, D & P
  South – Sta. 110 + 00 to Sta. 131 + 50

- R04 – G, D & P
  North – 185th Street to 183rd Street

- R05A – G & D
  North – Sta. 126 + 75 to 202 + 02.13

- R05B – G & D & P
  North – Sta. 126 + 75 to 202 + 02.13
Questions