SLIDE IN BRIDGE CONSTRUCTION (SIBC) FROM THE CONTRACTOR/CONSTRUCTION PERSPECTIVE

March 6, 2014; 11:00am MST
SIBC Webinar Series

➤ Owner/Policy Maker Perspective
  – November 2013 (complete)
  – 2nd session scheduled later in year

➤ Engineer/Designer Perspective
  – January 2014 (complete)
  – 2nd session: April 3, 2014
  – 3rd session scheduled later in year

➤ Contractor/Constructor Perspective
  – March 2014 (today’s webinar)
  – 2nd and 3rd sessions scheduled later in year
Webinar Agenda

- National Update (~2 min.)
- Featured Presentation: Contractor/Construction Perspective (~30 min.)
  - Mike Monroe, Kiewit Infrastructure Co., Denver, CO
- Questions & Answers (~15 min.)
- Next Steps (~3 min.)
National Update

- FHWA SIBC website operational
  - SIBC Implementation Guide now available

- Technical Services Support Center (TSSC)
  - Instructor-based training available in May 2014
ROCKY FORD, COLORADO
BRIDGE SLIDES

Mike Monroe
Kiewit Infrastructure Co.
Presentation Outline

- Project overview
- Decision
- Construction methods
- Delivery method
- Lessons Learned
Project Overview

- $5,052,038 CM/GC contract
- $112,000 Pre-construction contract
- Pre-Construction Team: CDOT, Jacobs, & Kiewit
- Two bridges on Hwy 266 and one bridge on Hwy 71
- Project goals
- Design constraints
Project Overview

[Map showing location of Rocky Ford]
Project Overview
Project Overview – Video

~4-MINUTE VIDEO DISCUSSING/SHOWING BRIDGE SLIDES

https://vimeo.com/61848742
Decision

- Project at 30% design when Kiewit selected under CM/GC contract
- Test project for slide method
- CDOT goal: test innovation; reason for one slide and one roll
- Kiewit heavily involved in decisions on the slide methods
Slide / Roll - Concept
Slide / Roll – As Implemented
Roll Method – Ft Lyon Bridge

- Concrete box girders
- Length 87’
- Width 39’
- Weight 540 TN
- 4 EA 100 TN lifting jacks per abutment
- 2 EA 64 TN hollow cylinder double acting jacks
Roll Method – Ft Lyon Bridge
Roll Method – Ft Lyon Bridge
Roll Method – Ft Lyon Bridge
Roll Method – Ft Lyon Bridge
Roll Method – Ft Lyon Bridge
Slide Method – Holbrook Bridge

- Steel girders
- Length 53’
- Width 39’
- Weight 210 TN
- PTFE slide plates and bearings
- 2 EA 50 TN 20” stroke jacks
Slide Method – Holbrook Bridge
Slide Method – Holbrook Bridge
Slide Method – Holbrook Bridge
Slide Method – Holbrook Bridge
Slide Method – Holbrook Bridge
## Schedule – Fri-Sun (1/11-13/2013)

<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SH 266 Holbrook</td>
<td>57 hrs</td>
<td>Fri 1/11/13</td>
<td>Sun 1/13/13</td>
</tr>
<tr>
<td>2</td>
<td>Close Highway</td>
<td>1 hr</td>
<td>Fri 1/11/13</td>
<td>Fri 1/11/13</td>
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<tr>
<td>3</td>
<td>Remove Asphalt/Dirt</td>
<td>3 hrs</td>
<td>Fri 1/11/13</td>
<td>Fri 1/11/13</td>
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<tr>
<td>4</td>
<td>Unbolt Guardrail/Removal</td>
<td>3 hrs</td>
<td>Fri 1/11/13</td>
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<td>5</td>
<td>Cut Anchor Bolts</td>
<td>2 hrs</td>
<td>Fri 1/11/13</td>
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<td>6</td>
<td>Slide Bridge</td>
<td>6 hrs</td>
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<tr>
<td>7</td>
<td>Bolt Down</td>
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<td>Fri 1/11/13</td>
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<td>8</td>
<td>Form Wingwalls</td>
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<td>Fri 1/11/13</td>
<td>Fri 1/11/13</td>
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<tr>
<td>9</td>
<td>Pour</td>
<td>2 hrs</td>
<td>Fri 1/11/13</td>
<td>Sat 1/12/13</td>
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<tr>
<td>10</td>
<td>Cure</td>
<td>12 hrs</td>
<td>Sat 1/12/13</td>
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<td>11</td>
<td>Strip</td>
<td>1 hr</td>
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<td>Patch Concrete</td>
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<td>13</td>
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<td>Base</td>
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<td>Pave Bottom Mat</td>
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<td>Sun 1/11/13</td>
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<tr>
<td>17</td>
<td>Pave Top Mat</td>
<td>6 hrs</td>
<td>Sun 1/11/13</td>
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<td>18</td>
<td>SH 266 Ft. Lyon</td>
<td>55 hrs</td>
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<td>20</td>
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<td>21</td>
<td>Jack Up Bridge</td>
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<td>6 hrs</td>
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<td>Place Bearing Pad</td>
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<td>Closure</td>
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<tr>
<td>26</td>
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<td>Guardrail</td>
<td>7 hrs</td>
<td>Sun 1/13/13</td>
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<td>30</td>
<td>Signs</td>
<td>8 hrs</td>
<td>Sun 1/13/13</td>
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<tr>
<td>31</td>
<td>Stripe</td>
<td>4 hrs</td>
<td>Sun 1/13/13</td>
<td>Sun 1/13/13</td>
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**Slide Time**

**Roll Time**
Delivery Methods

- Contract model

- Early contractor and designer involvement is key
  - Cost control
  - Means and methods evaluation
  - Self-performance vs. hiring subs
  - Identification of long lead time materials
Lessons Learned

- Early contractor involvement
- KISS principle
- Modular components
- Schedule constraints
  - Fast tracked schedule on experimental project
  - New techniques require more time
- New methods require commitment from entire org.
QUESTION & ANSWER PERIOD

Kevin Thompson, URS Moderator (~15 minutes)
Q&A Panel

➢ Kevin Thompson, P.E., URS Corporation
  916.993.7638, kevin.thompson@urs.com

➢ Mike Monroe, Kiewit Infrastructure Co.
  303.797.9330, mike.monroe@kiewit.com

➢ Jeffrey Dobmeier, P.E., S.E., Jacobs Engineering
  303.820.4892, jeffrey.dobmeier@jacobs.com

➢ Michael Arens, P.E., S.E., Michael Baker Jr., Inc.
  801.352.5981, marens@mbakercorp.com

➢ Travis Boone, P.E., URS Corporation
  303.740.2671, travis.boone@urs.com
NEXT STEPS

Kevin Thompson, URS (~3 minutes)
Websites/Resources

➤ SIBC Webinar Training Project Website
  – www.slideinbridgeconstruction.com
  – Webinar registration, a recording of today’s webinar, presentation slides, video, and Q&A results will be posted within 10 business days

➤ FHWA SIBC Website
  – SIBC Implementation Guide now available
  – Many other resources, case studies, etc. also available
FHWA SIBC Technical Services Support Center (TSSC)

- Request personal, professional answers to questions via TSSC
- Download topical resources
- Learn about instructor-based training courses (available beginning May 2014)

www.fhwa.dot.gov/construction/sibc/

or

search “FHWA slide”
Future SIBC Training

- Engineer/Designer Perspective

- Contractor/Construction Perspective
  - 2nd Session: Tentatively set for May 2014

- Owner/Policy Maker Perspective
  - 2nd Session: Tentatively set for June 2014

- Web-based training modules available in spring 2014

SPECIAL NOTICE: Next FIU ABC Center Webinar “Wisconsin DOT’s Rawson Avenue Bridge Replacement using Precast Elements and Systems”
Thursday, March 20, 2014 (1:00 – 2:00 p.m. Eastern)
THANK YOU FOR YOUR PARTICIPATION!

For issues or questions regarding this training or the www.slideinbridgeconstruction.com website, please e-mail sibc@urs.com