Replacement of Norfolk Southern Bridge CF-35.40 over Cotton Run, Seven Mile, OH
Wednesday, October 3, 2018
AGENDA

• Introductions
• How It Started
• Bridge Location
• Existing Bridge Information
• Immediate Response
• Monitoring the Existing Bridge
• Type Study
• Final Design
• Project Schedule
• Construction
• 24-Hour Outage
• Questions
Introductions

Owner – Norfolk Southern

Lisa Hoekenga, P.E., S.E. - Michael Baker International

Subconsultants:
KS Associates
NEAS, Inc.
Geo-Instruments
Stone Environmental

Contractor – McHugh Construction

“…the strength of the Pack is the Wolf, and the strength of the Wolf is the Pack…”
IMMEDIATE RESPONSE

[Images of construction work and debris]

“We Make a Difference

“...the strength of the Pack is the Wolf, and the strength of the Wolf is the Pack...”
MONITORING THE EXISTING BRIDGE
**Option 1** – Rehabilitate Existing Substructure, Replace Superstructure

**Option 2** – Replace Piers and Superstructure

**Option 3** – Four Adjacent Concrete Box Culverts

**Option 4** – Single Span Bridge Replacement

**Option 5** – Two Span Bridge Replacement

**Option 6** – New Bridge on New Permanent Alignment
## TYPE STUDY

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Construction Cost</th>
<th>Required Track Outage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rehabilitate Existing Structure</td>
<td>$2,072,000</td>
<td>40 hrs</td>
</tr>
<tr>
<td>2</td>
<td>Replace Piers and Superstructure</td>
<td>$673,000</td>
<td>36 hrs</td>
</tr>
<tr>
<td>3</td>
<td>Four Adjacent Concrete Box Culverts – OPTION ELIMINATED</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4a</td>
<td>Single Span Bridge Replacement - Slide-In During Track Outage</td>
<td>$1,923,000</td>
<td>24 hrs</td>
</tr>
<tr>
<td>4b</td>
<td>Single Span Bridge Replacement - Temporary Track Realignment</td>
<td>$3,153,000</td>
<td>14 hrs [6hrs/8hrs]</td>
</tr>
<tr>
<td>5a</td>
<td>Two-Span Bridge Replacement - Slide-In During Track Outage</td>
<td>$2,825,000</td>
<td>28 hrs</td>
</tr>
<tr>
<td>5b</td>
<td>Two-Span Bridge Replacement - Temporary Track Realignment</td>
<td>$4,194,000</td>
<td>22 hrs [6 hrs/16hrs]</td>
</tr>
<tr>
<td>6</td>
<td>New Bridge on New Permanent Alignment</td>
<td>$3,843,000</td>
<td>8 hrs</td>
</tr>
</tbody>
</table>
FINAL DESIGN

Top Flange: 20” x 1 5/8”
Web: 60” x 5/8”
Bottom Flange: 20” x 1 5/8”
Floorbeams: W21x101 spa. @ 2’-7 3/16”
Scour Event 5-24-17
Track Operations Resume 5-30-17
Type Study Begins 6-5-17
Type Study Complete 8-10-17
90% Plans Complete 8-10-17
Type Study Complete 6-28-17
Permit Submitted 8-14-17
100% Plans Complete 8-30-17
Permit Acquired 11-14-17
Bids Due 10-5-17
Contractor Mobilized 1-8-18
24-HR Track Outage 5-21-18
CONSTRUCTION AROUND EXISTING BRIDGE
MONITORING THE EXISTING BRIDGE

Direction 1
- X (into page)
+ X (out of page)

Direction 2
+ Y
- Y

\[ \approx 0.005 \]
\[ \approx 0.03 \]
\[ \approx 0.025 \]

SOUTH ELEVATION

0.025 in/ft \times 22 \text{ ft} = 0.55 \text{ in} \text{ settlement at east pier}
24-Hour Construction Outage

24-Hr Construction Video

Differences in NS plans versus ODOT plans
Final Bridge Video
QUESTIONS?
Michael Baker International

We Make a Difference