South Split Project Management

Date: Tuesday, March 11, 2014
Time: 4:00-4:50 PM
Moderator: Roland Fegan, INDOT
Speakers and Participants:
Roland Fegan, INDOT
Mike Wilmot, INDOT

This session will discuss the efforts made to keep key I-65 / I-70 South Split project personnel involved on a daily basis on this fast track project and the methods used to reach timely solutions for construction and design related issues. Strategies used for tracking and resolving all Contractor RFIs without delaying the critical path will also be presented.
Need for the Project

- Oversize loads were striking the South Split bridges
- Collision on February 22\textsuperscript{nd} required a weekend closure of the South Split for emergency repairs to the Virginia Avenue Bridge
- Achieve a minimum vertical clearance of 14’ 9”
February 22, 2013. The accident that closed I-65 over the weekend.
February 22, 2013. The accident that closed I-65 over the weekend.
Beam cracked in two places
Beam cracked in two places
**Project Scope**

- Lower the roadbed beneath seven South Split bridges
- Half mile of new steel-reinforced concrete pavement
- Replace outside beams on Virginia Avenue bridges
- In 2014, replace the East Street structure over I-70
Schedule

- Advertise (July 10th); Letting (August 1st)
- Close South Split between August 21st and September 3rd
- South Split open to unrestricted traffic by November 11th
- A+B contract. 80 calendar days at $60,000/day
- Virginia Ave NB and SB steel girders will be procured before letting and delivered to the site on October 1st
- Advance warning signs will be installed prior to letting, under an existing contract
CRCP Design

- 11.5 inches QC/QA CRCP
  - Reinforced in the longitudinal direction with #7 steel bars at 6 3/4” spacing
  - Transverse direction with #5 steel bars at 3’ spacing
  - Top of the longitudinal steel installed 3.5” from the top of the pavement
- 330 lb/sy QC/QA-HMA, 5, 64, Base 19.0mm
- 6” of #53 Base – drainable
- Woven geotextile
- Type 1B subgrade treatment
Contract Management

- Contractor pre-bid conference
- A+B contract, maximum 80 days at $60,000/day
- Milestone bid 59 days.
- The Contract was awarded for $12.4 million
Challenges

- Tight Schedule - March to June to Prepare Plans
- New Type of Pavement - CRCP
- Short Timeframe From Letting to Start of Work
- Getting InDOT Staff Assembled and Familiar with the Project
InDOT Commitments

- PE/PS Review of Plans Prior to Letting
- Pre-Bid Meeting to Answer Questions
- Trip to Illinois to Review CRCP Placement
- Assembling InDOT Project Staff Prior to First Day of Work
**InDOT Commitments**

- Temporary Panel Signs to be fabricated and installed under separate contract
- Replacement Beams Obtained Separately
- Noise Ordinance Waiver approved by Indianapolis
A group from Central Office and the Greenfield District traveled to Illinois to get their perspective of CRC paving. Special thanks to Rick Coronado, Resident Engineer for the I-57/I-64 project. In addition, thanks to Illinois DOT for taking time to meet with us to share their insights.
Paving is similar in Illinois as it is in Indiana.
This was new – Transverse bar assemblies and longitudinal steel. Note laps are staggered in the longitudinal steel. We revised our Transverse Bar Assembly Specification
Normally we see D-1 Joints here
Construction Joint
We revised our Transverse Bar Assembly Specification
First challenge – schedule
Normally have 6-8 Weeks from letting to Pre-Construction Meeting
Required advance review of plans
Tight timetable to work through questions
Project Commitment

- Safety
- Communication – InDOT Staff / Contractor
- Communication – Day / Night Crews
- Contractor was working 24/7 - Answers Needed to be Obtained in Hours Instead of Days
- Availability to Meet Onsite
Project Commitment

- Questions Answered at the Lowest Possible Level
- Quick Response From Designers and Support Divisions
This is what is typical on job
Challenges

- Adjust Casting To Grade

+82 Str. No. MH-409EX
Adjust Casting to Grade
Challenges

- Adjust Casting (?) To Grade
- Top Of Vault Within Inches of Driving Surface Grade
Challenge Resolved

- Vault Sawcut, 2 Foot Section of Vault Removed and the Lid Lowered.
- Aggregate, HMA, CRCP Placed over Structure
Challenges

- Water in Subgrade
Challenges

- More Water in Subgrade

![Image of construction site with water in subgrade]
Challenge Resolved

- 3 Dry-Wells Placed to Collect Ground Water
- Undercut Grade 2 Feet.
- Placed Geo-grid
- #53 Compacted Aggregate
Cement stabilization
Geotextile/Modified #53 on Cement stabilization
HMA Base with White curing compound sprayed to control temperatures.
HMA Base

- White Curing Compound Sprayed on HMA to Control Temperatures
- 60’ Longitudinal Steel Being Delivered

HMA Base with White curing compound sprayed to control temperatures.
Placement of lugs
Placement of lugs
Cement Stabilization was too hard for an excavator to dig. Used cutter to cut each side of lug trench.
Transverse bar assemblies to speed up placement of steel.
HMA base to give a smooth platform for the pavement/Reinforcing steel for CRCP
Due to the timeframe, the contractor used string line for the first section.
Tight tolerances on slip form paver gave the contractor problems on the first day.
First try for expansion joint
From this perspective, it looks the same
Beams Sent To Bowen Lab at Purdue

- S-BRITE – Steel Bridge Research, Inspection, Training and Engineering Center
- The girders donated from the Virginia Ave bridge over I-65 will become part of the Bridge Component Gallery.
- Plans to include them in an ongoing Probability of Detection study aimed at better understanding the probability of visual detection of steel bridge defects.
Day before opening
Fletcher SB 14’-7” 15’-0”  
Fletcher NB 14’-5” 16’-4”

Calvary SB 14’-1” 15’-4”  
Calvary NB 14’-0” 15’-8”

Virginia SB 14’-0” 15’-1”  
Virginia NB 14’-2” 15’-7”
Result

East St WB 14'-2"  2014
East St EB  14'-3"  2014

SB I-65 Under EB I-70 EBR
14'-2"  15'-6"

EB I-70 Under I-65 NBR
14'-11"  2014

Morris St. SB  14'-6"  15'-2"
Morris St. NB  14'-2"  15'-5"
Result

- I-65 Opened before Midnight, 10/16/13
- 44 Days of Closure
- Quality Product Delivered