I-435 South Loop Link Design-Build Project
About the Region
Purpose and Need

- Replace/Rehab Bridges
  - Wornall
  - Holmes
  - 104th Street

- Corridor Resurfacing

- Corridor Mobility Study (155,000 VPD)
  - Finding:
    - Add Lanes
    - Remove Loop Ramps at Holmes
Project Area

435EB @ STATELINE (23)
Project Area

PM Peak Hour Congestion
Project Goals

1. Deliver the project utilizing a diverse workforce by May 1, 2020 within the program budget of $74.8 million.

2. Minimize impacts to the traveling public during construction.


Configuration Requirements

• **Deal Breakers:**

• Reconstruct Bridges over Wornall and Holmes.

• Replace the deck and rehabilitate the bridge over 104th.

• Provide a new riding surface on I-435 and ramps.

• Improve mobility and safety along the I-435 corridor.

• Construct new sidewalk along Stateline Road.
Awarded as the Best Value Proposer
Challenges and Solutions
Project Goals

- Minimize Impacts to Traffic During Construction
- Minimize Future Maintenance
- Maximize Safety and Peak Period Travel Speeds
Concrete Overlay
Single Span Bridges
- Phase 0
  - Install erosion control & clear slopes
  - Prepare median shoulders
  - Construct MSE walls at Holmes
  - Provide turn lanes at Holmes and close loop ramps
Phase 1A

1. Move traffic towards median in 4 lanes
2. Widen slopes, construct retaining walls
3. Construct outside 5\textsuperscript{th} lane, auxiliary lane & shoulder
4. Construct new bridges adjacent Wornall & Holmes bridges
5. Begin bridge deck widening at 104\textsuperscript{th} and Blue River
- **Phase 1B**
  1. Continue Phase 1 bridge construction
  2. Move ramps to new ramp pavement
  3. Construct remainder of ramp width
Phase 1C & 1D

1. Pave remainder of Phase 1
2. Complete all ramp paving
3. Ramps complete and in final configuration
Phase 2

1. Move 2 lanes of traffic to the new outside lanes
2. Leave 2 lanes of traffic adjacent to the median barrier
3. Construct the new lanes between the travel lanes
Phase 2 (cont.)

1. Move 2 lanes of traffic to the new outside lanes
2. Leave 2 lanes of traffic adjacent to the median barrier
Phase 3

1. Move all 4 lanes to new pavement (outside)
2. Construct median pavement
3. Construct median side of bridges
- Phase 3B
  1. Complete the deck replacement of the 104th St. Bridge
Phase 3C

1. Complete all remaining aspects of the project.
   • Permanent striping, signing, drainage, grass growth, etc.

Project Complete!
Innovation
Concrete Overlay
- **RFP New Pavement Section**
  1. 6” Aggregate Base
  2. 1.25” dowels at 15’ o/c
  3. 30” tie bars at 30” o/c
  4. 11” PCCP

- **RBE Overlay Section**
  1. Existing UBAWS interlayer
  2. 1.5” dowels at 12’ o/c
  3. 18” tie bars at 24” o/c
  4. 8.5” PCCP Min. (Avg 10.5”)
Innovative Coping

PRECAST COPING
W/TYPE "B" GUTTER DETAIL

ALTERNATE CAST-IN-PLACE DETAIL
Unexpected Issues…

A problem has been detected and Windows has been shut down to prevent damage to your computer.

Modification of system code or a critical data structure was detected.

If this is the first time you’ve seen this Stop error screen, restart your computer. If this screen appears again, follow these steps:

- Check to make sure any new hardware or software is properly installed.
- If this is a new installation, ask your hardware or software manufacturer for any Windows updates you might need.
- If problems continue, disable or remove any newly installed hardware or software. Disable BIOS memory options such as caching or shadowing.
- If you need to use Safe Mode to remove or disable components, restart your computer, press F8 to select Advanced Startup options, and then select Safe Mode.

Technical information:

*** STOP: 0x000000109 (0xA3A039D896553553, 0xB3B7465EEBD204A9, 0xFFFFFFFF80005733003, 0
x0000000000000001)

Collecting data for crash dump …
Initializing disk for crash dump …
Beginning dump of physical memory.
Dumping physical memory to disk: 100
Physical memory dump complete.
Contact your system admin or technical support group for further assistance.
- Encountered composite soil pins during clearing
  - Impacted NE, NW quadrants at Wornall, SE quadrant Holmes
Previous Experimental Soil Stabilization Project

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  - Impacted NE, NW quadrants at Wornall, SE quadrant Holmes
- Encountered composite soil pins during clearing
  - Impacted NE, NW quadrants at Wornall, SE quadrant Holmes
Previous Experimental Soil Stabilization Project

- Solution was to replace unstable material
Previous Experimental Soil Stabilization Project
  - Substantial undergrading effort
Problem Solved
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Blue River Bearings
Blue River Bearings

- 13 of 19 bearings rocked beyond design
- 2 adjacent bearings on WB bridge in failure
- WB bridge slab dropped 1.5” at lanes 2 & 3
Blue River Bearings
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Blue River Bearings
Field Update

- Construction commenced with the issuing of NTP-2 3-23-18
- WB I-435 in phase 2B construction
- EB I-435 in phase 1B construction (90% paved)
- Blue River bridge widening nearly complete
- 104th St UPRR bridge in slab construction phase
- KC ‘18/’19 Winter precipitation = 41 days and counting
Potholes!
Recreational Pothole
Decorative Pothole
Spa Relaxation Pothole
Happy Valentine Pothole
Potholes!
Pothole Warning Program

Know Your Potholes!

- Urban Slalom
- Sophie’s Choice
- Post-Apocalyptic

- Straddle Up!
- Widow-Maker
- Prize Inside
**EB I-435 March-April**
1. Complete Blue River & 104th St Bridges Phase 1
2. Pave to bridge ends and complete 104th St ramp

**WB I-435 March-April**
1. Complete Holmes & Wornall Phase 2 bridges
2. Pave additional interior lane project length
EB I-435 May-June

1. Complete Holmes & Wornall Phase 2 bridges & 104th St Phase 2 re-deck
2. Pave additional interior lane project length

WB I-435 May

1. Complete Holmes & Wornall Phase 2 bridges
2. Pave additional interior lane project length
- EB I-435 July
  1. Pave additional interior lane project length

- WB I-435 June
  1. Pave additional interior lane project length
**EB I-435 August-October**

1. Pave additional interior lane project length
2. Make Storm Improvements
3. Holmes/Wornall Phase 3 Bridge Work
4. 104th St Phase 3A Re-deck

**WB I-435 August-October**

1. Pave additional interior lane project length
2. Make Storm Improvements
3. Holmes/Wornall Phase 3 Bridge Work
4. 104th St Phase 3A Re-deck
- EB I-435 November
  1. No work

- WB I-435 November
  1. Final Re-deck phase
  104th St bridge
1. Establish seed growth
2. Complete signing
3. Complete permanent pavement marking