



Interchange Design & Challenges

TxDOT Dallas District

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December 2, 2022



HELP #EndTheStreakTX

End the streak of daily deaths on Texas roadways.

TxDOT.gov (Keyword: #EndTheStreakTX)



#EndTheStreakTX Toolkit





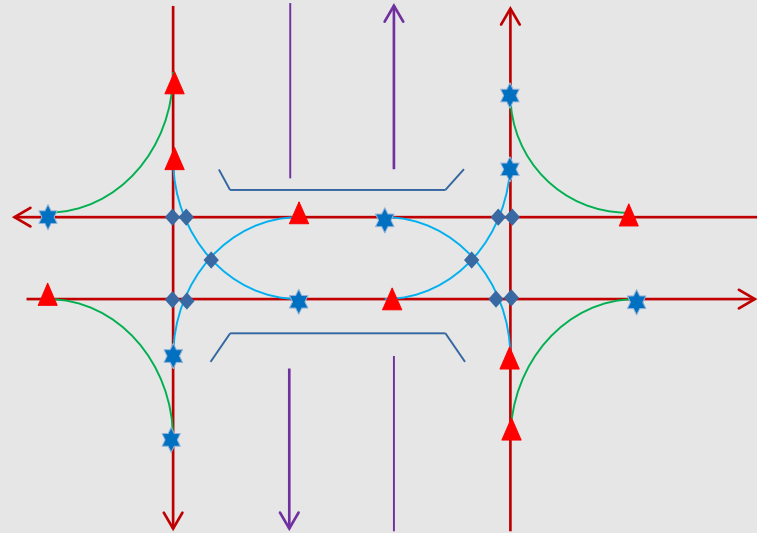
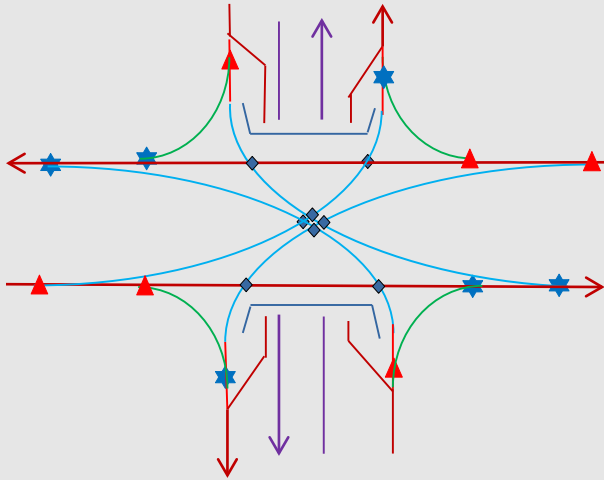
- Large Traffic Volumes
- Constrained Right of Way
- Existing and Planned Development
- Adjacent Projects
- Sequence of Work/ Construction Phasing
- Utility Coordination
- Balancing Accelerated Schedules & Resources

What is a SPUI?



- Single Point Urban Interchange
- Smaller Right of Way Footprint
- Increased Capacity
- Simpler Signal Phasing
- Through Movements Bypass the Intersection
- Reduced number of Crossover Conflict Points





Things to Consider: placement of bypass lanes

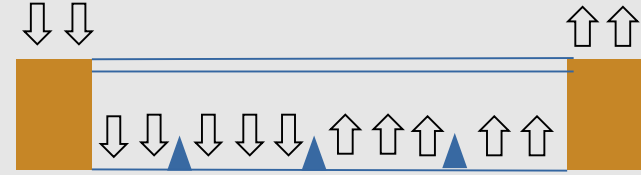


■ Outside placement

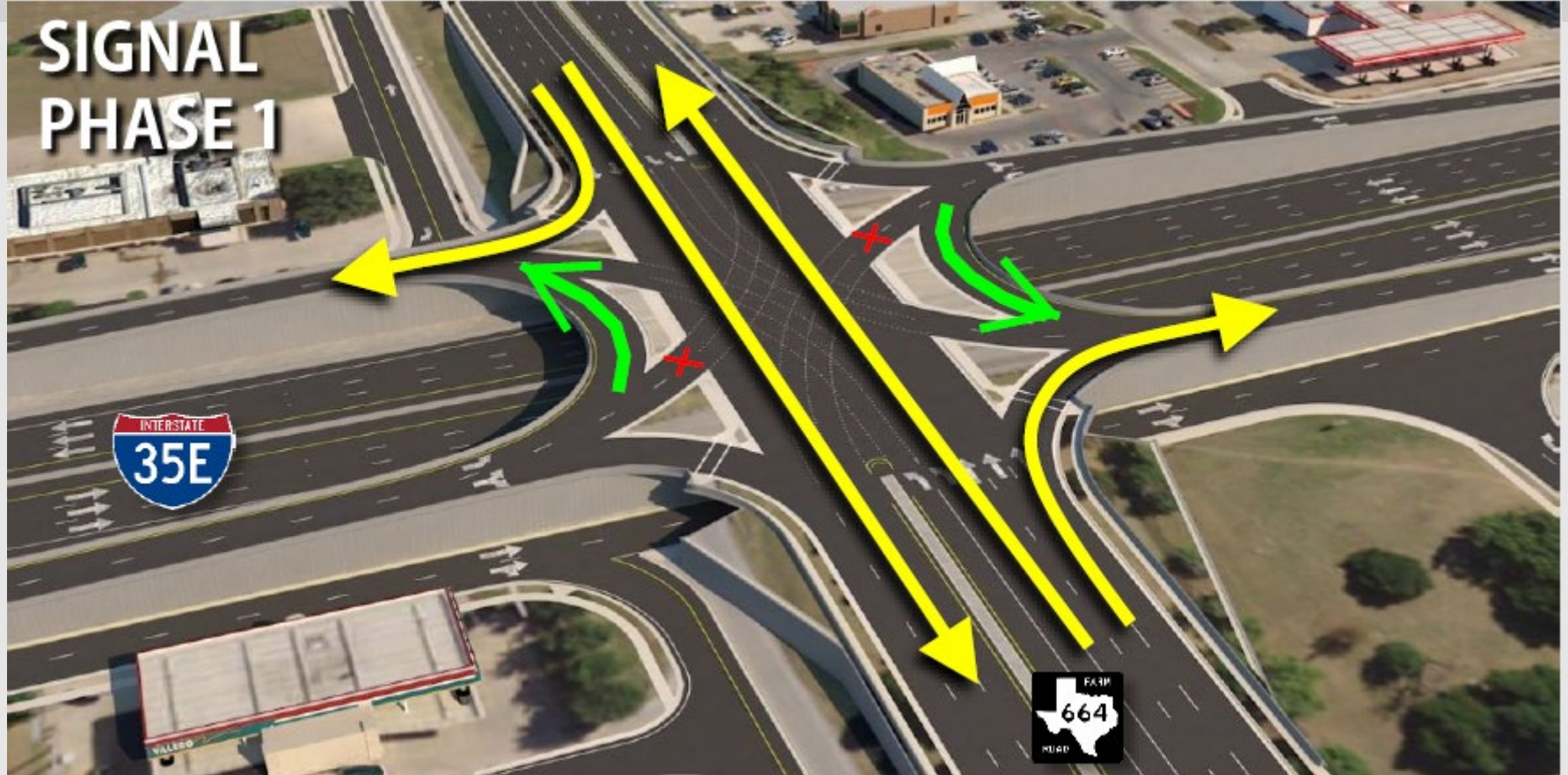


- Advantages:
 - Access to existing business
 - Smaller intersection
- Disadvantages:
 - More complicated bridge
 - More walls
 - Tighter geometries

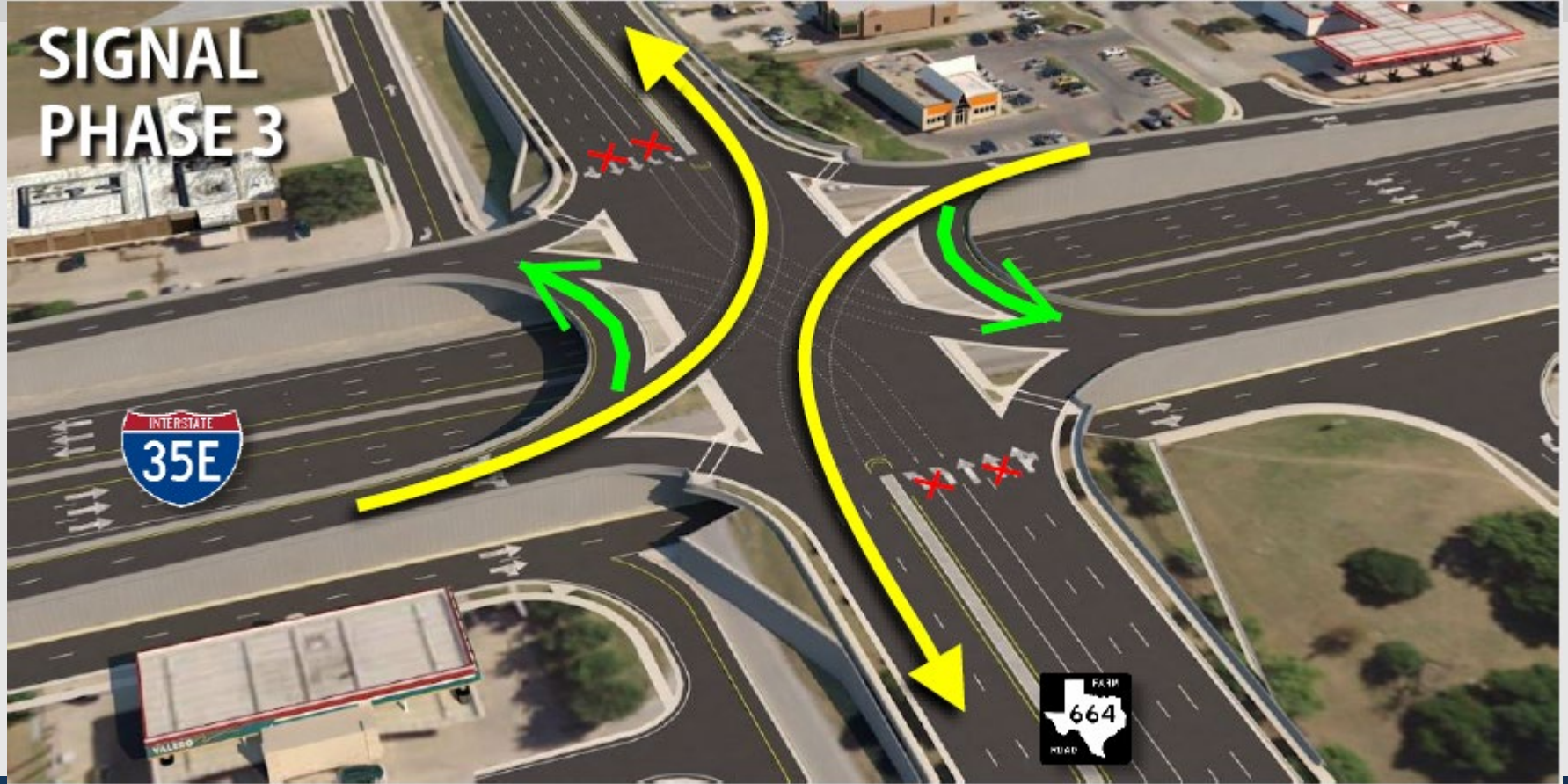
■ Inside placement

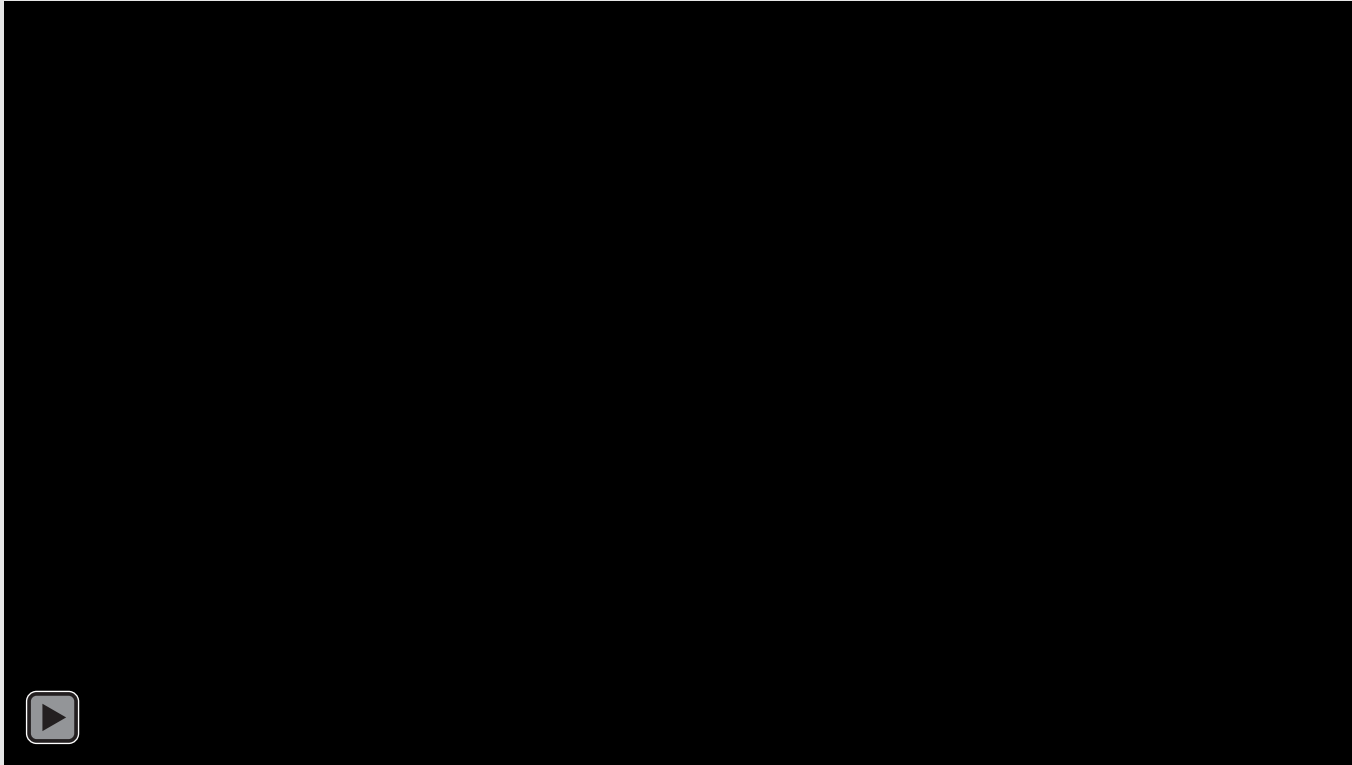


- Advantages:
 - Simpler bridge structure
- Disadvantages:
 - Larger travel time on intersection
 - No access to businesses

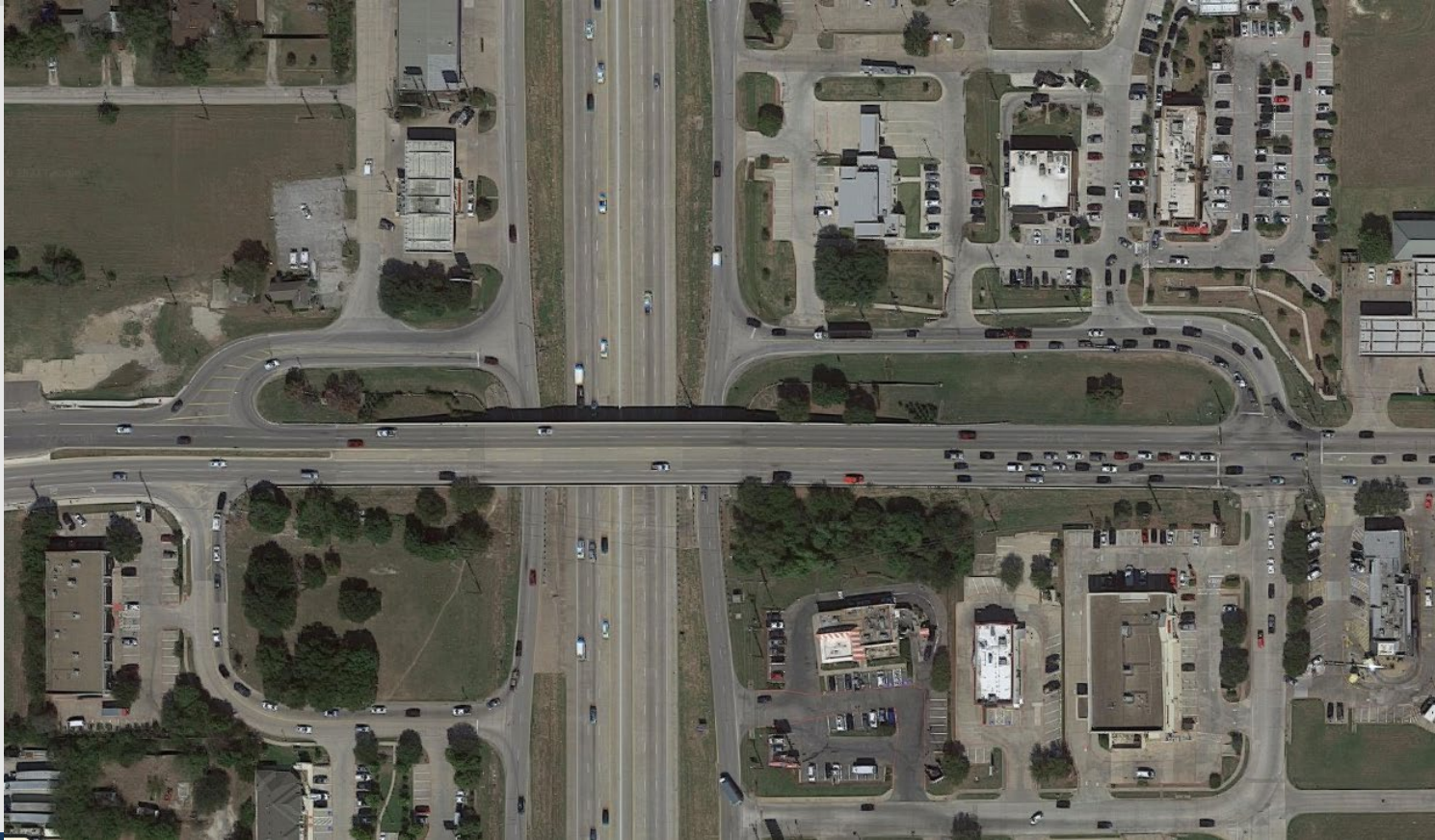


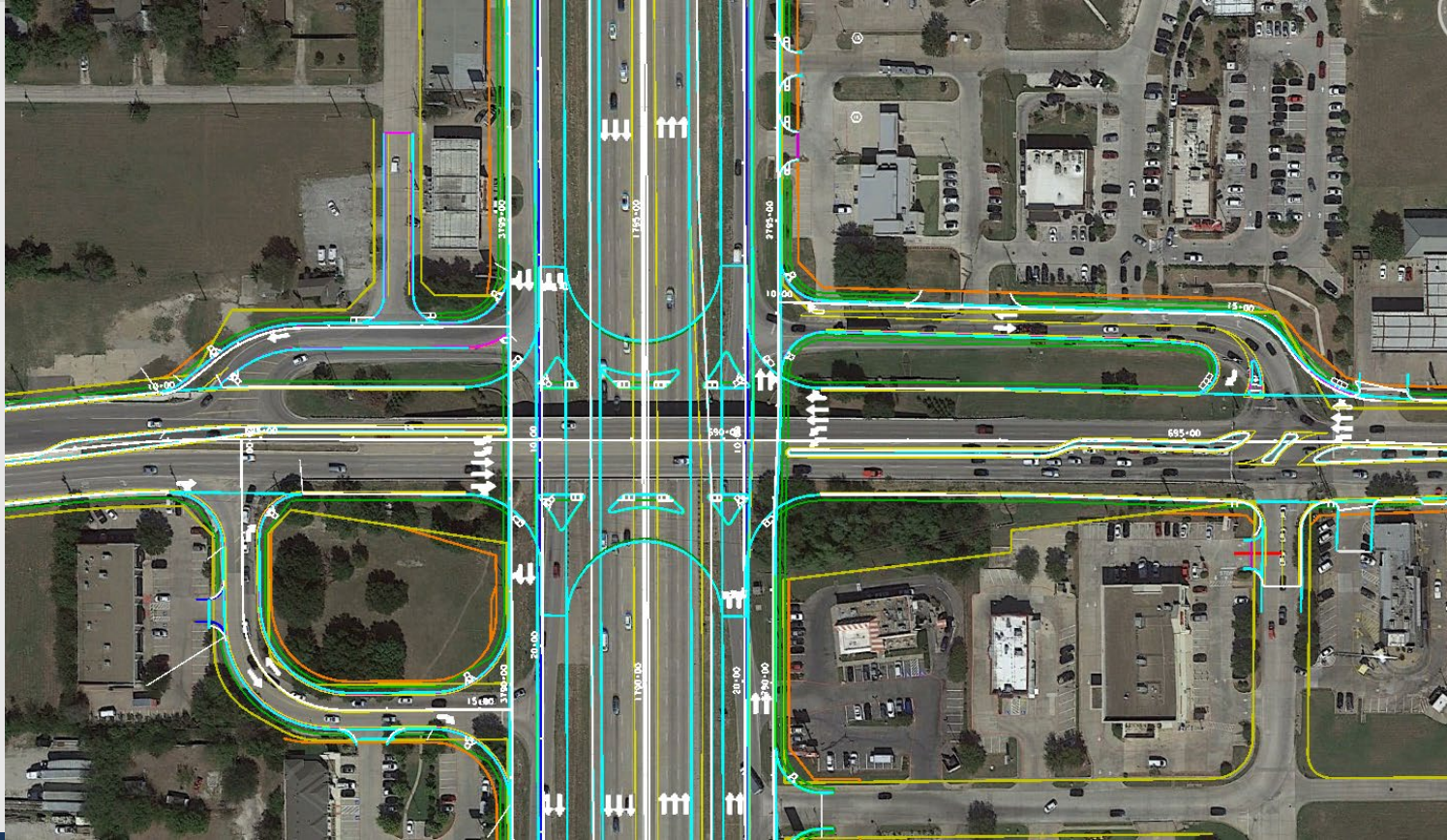






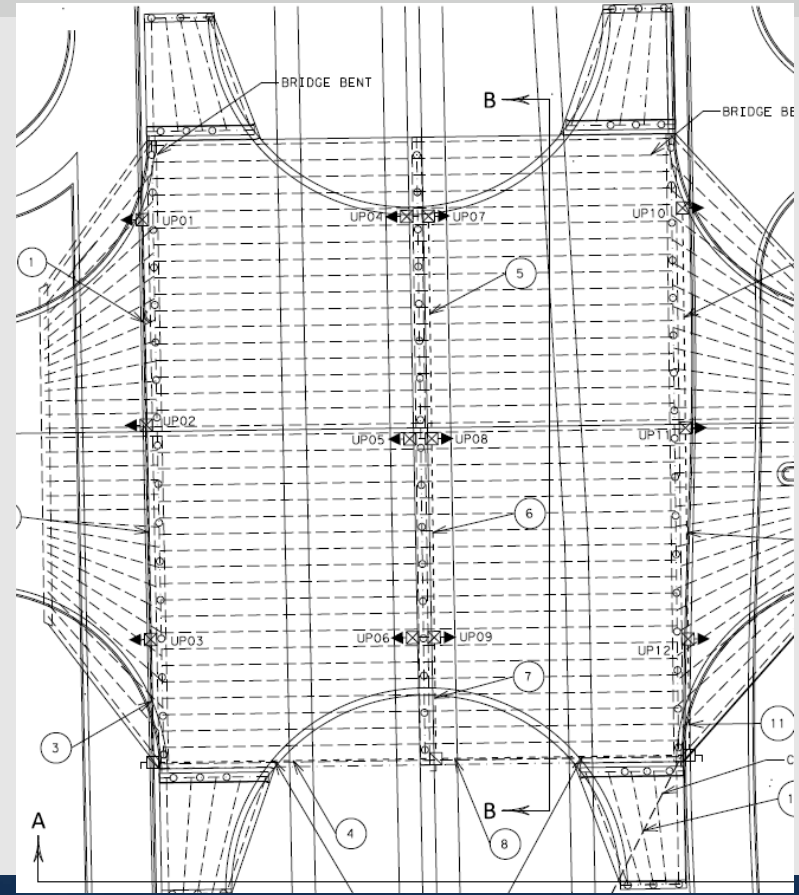
IH 35E at FM 664 in Red Oak, TX (Ellis/Dallas County)



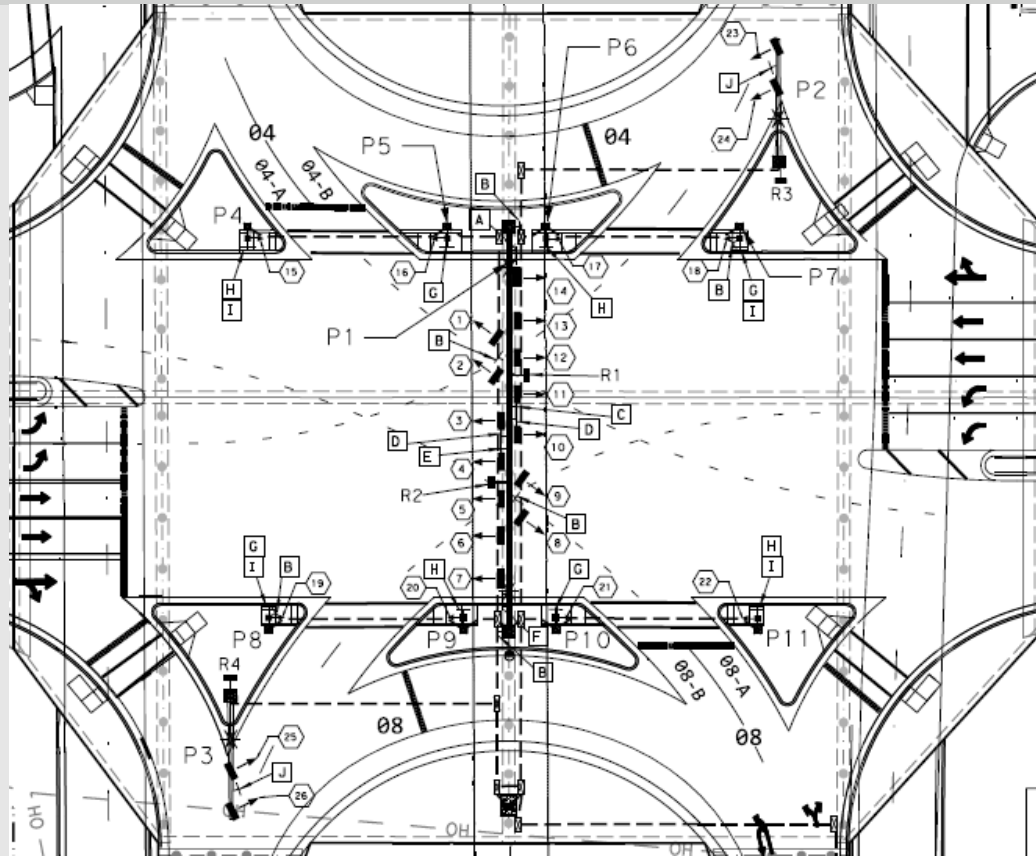


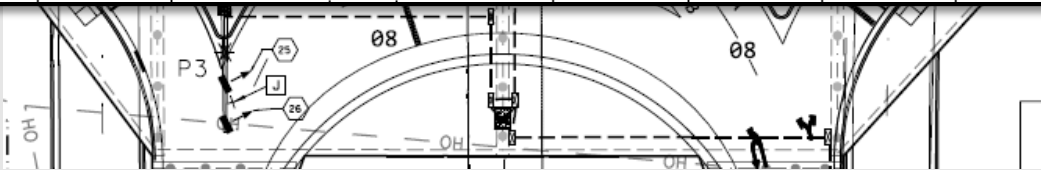


- Adjacent project coordination (planning & design)
- Preserve existing jughandle ramps
- Stakeholder feedback
- Phase construction of large bridge structure
 - Multiple bridges, multiple spans
 - Existing & Proposed grade differences
 - Milestone Incentives
 - Lack of alternative/ detour routes

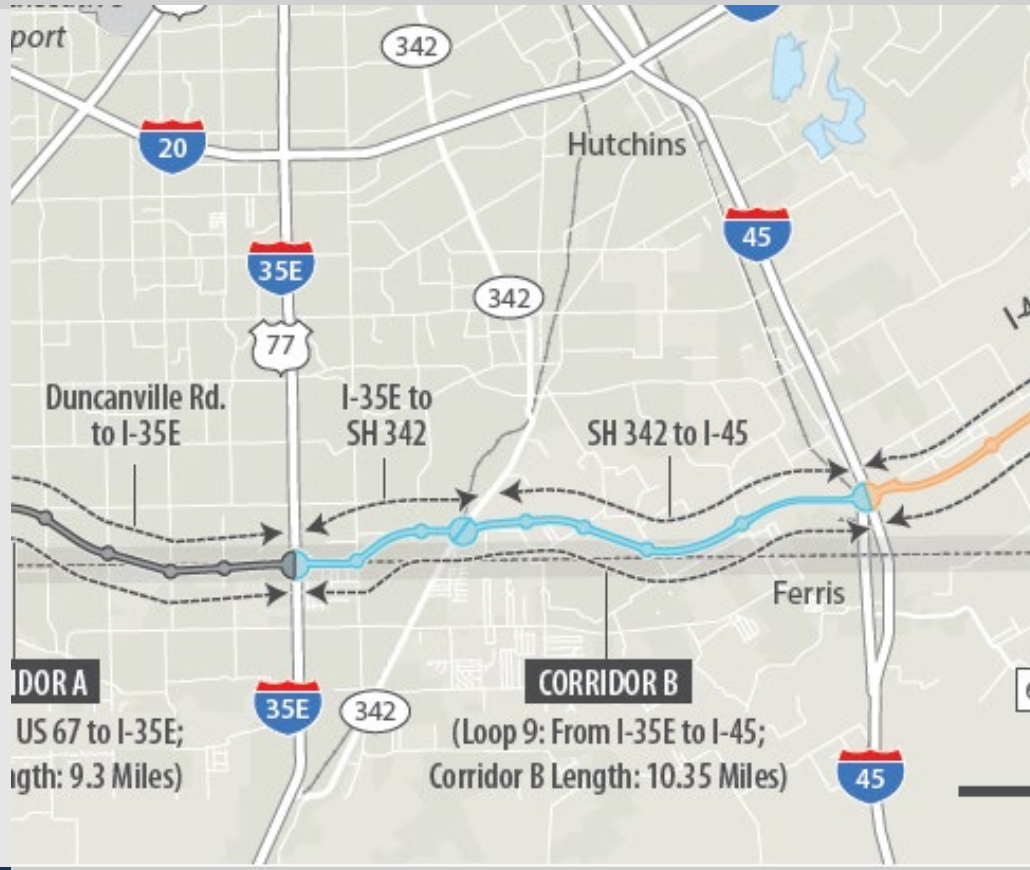


Crossbeam Span Signal Structure





Adjacent Projects

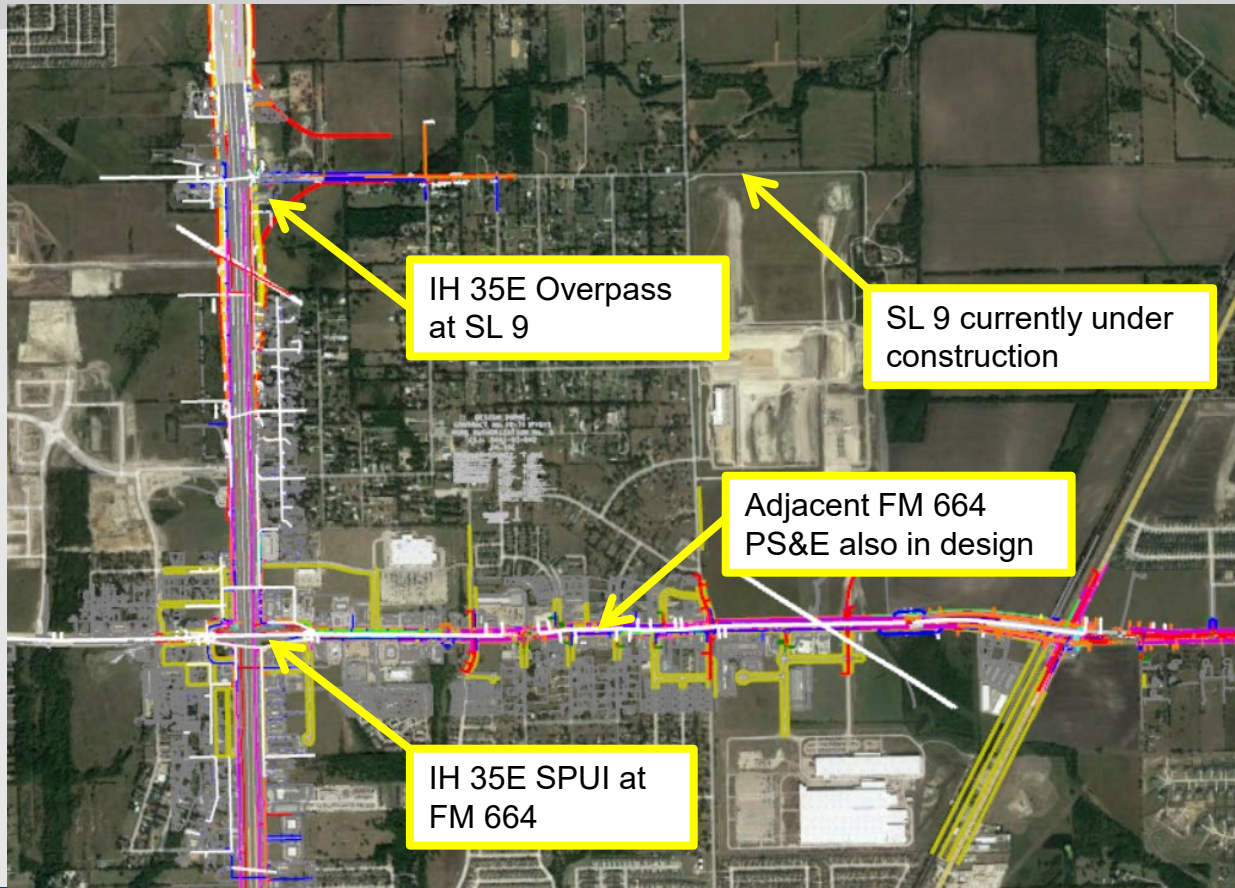






- Two corridors (SL 9 and FM 664) developed independently
- Each with interim and ultimate conditions
- Each broken into multiple projects for PS&E
- Two 35E interchanges close in proximity and time (1 mile apart)
- Solution= combine interchanges into one PS&E
 - Implications to programming, design, traffic control phasing, ROW acquisition, utility coordination, and more...

Adjacent Projects





- Lesson Learned (so far)
 - ORGANIZATION !!!
 - COORDINATION !!!
 - DOCUMENTATION !!!