

# West Texas Development Responding to Increasing Wastewater Flows in Downtown Lubbock

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## OVERVIEW

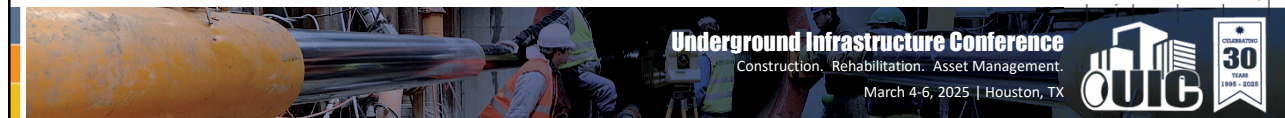
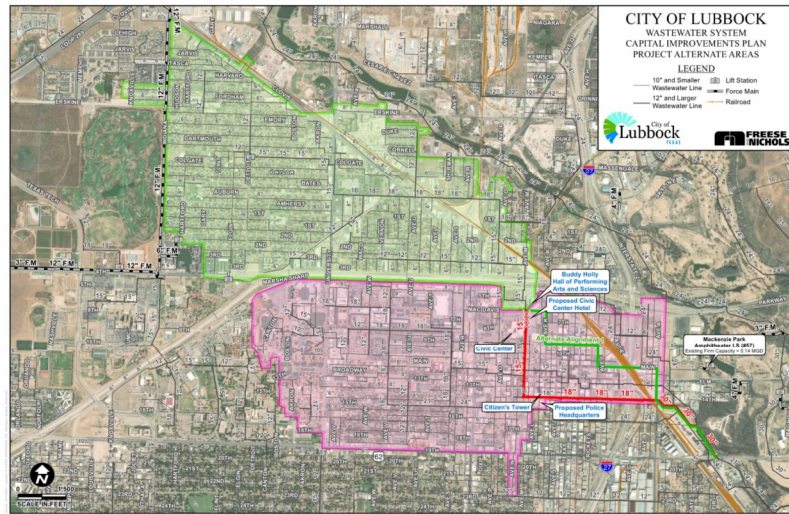
- ✓ Project Purpose
- ✓ Goals
- ✓ Study
- ✓ Design
- ✓ Construction



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## PROJECT PURPOSE – SERVICE AREA

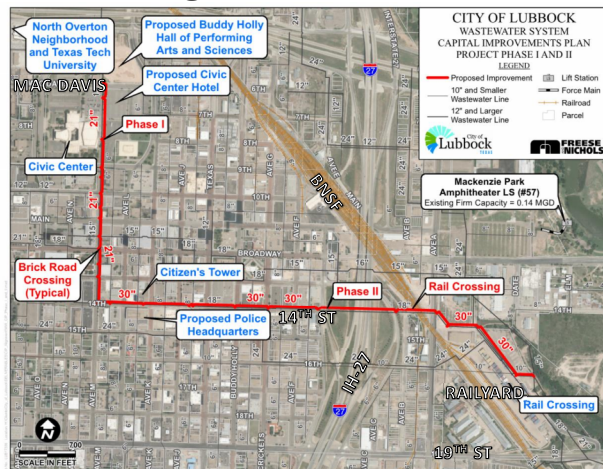
- ✓ West Development
- ✓ Texas Tech
- ✓ Businesses



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## PROJECT PURPOSE – DRIVERS

- ✓ Sewer Capacity
- ✓ Sewer Condition
- ✓ Downtown Growth & Redevelopment
- ✓ Consolidate System

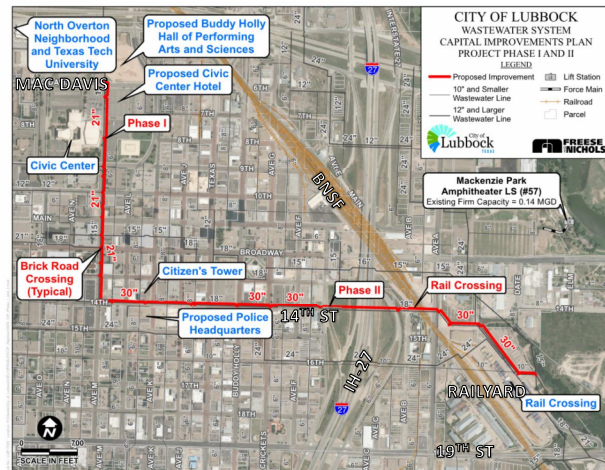


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## GOALS

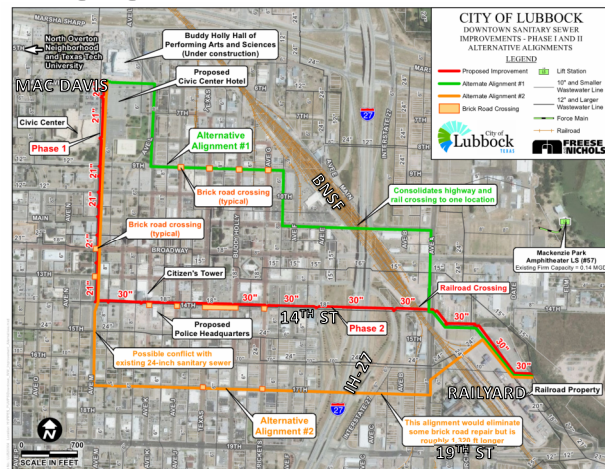
- ✓ Minimize Impact
- ✓ Coordination:  
TxDOT & Railroad
- ✓ Hydraulic Design for  
Longevity
- ✓ On-Time & On-Budget



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## STUDY – MODEL ANALYSIS

- ✓ “What If...” Analysis
- ✓ Analyze Alignments  
and Pipe Sizes
- ✓ Select Most Beneficial  
Option

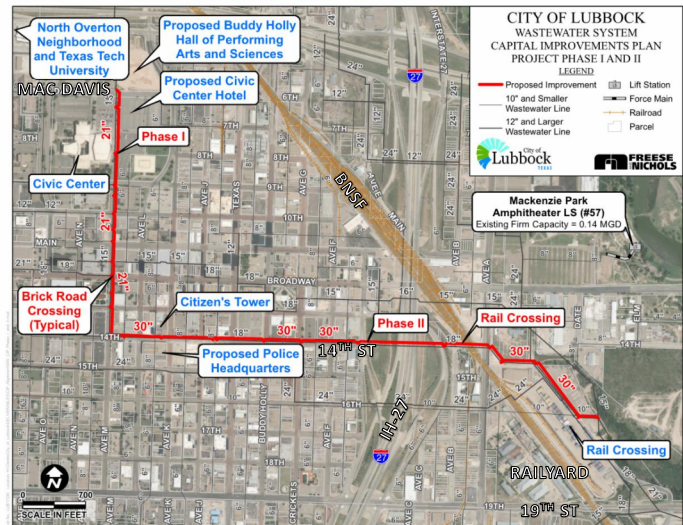


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## STUDY – RED ALIGNMENT

### Red: Master Plan Recommendation

- ✓ Simplest Hydraulics
- ✓ Located Within 14<sup>th</sup> Street
  - Citizen's Tower
  - Police Headquarters
  - Brick Paving
- ✓ Bore length ~1,900 LF

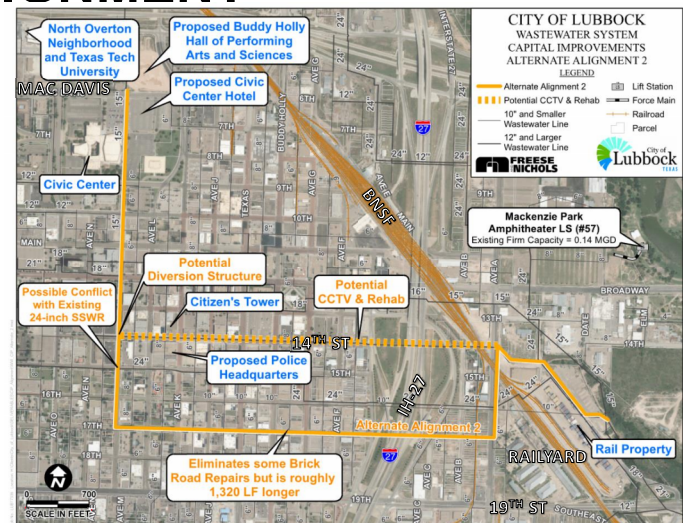


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## STUDY – ORANGE ALIGNMENT

### Orange:

- ✓ Avoids 14<sup>th</sup> Street
  - Citizen's Center
  - Brick Paving
- ✓ More Flow – Larger Pipe
- ✓ Ex 12\"/>



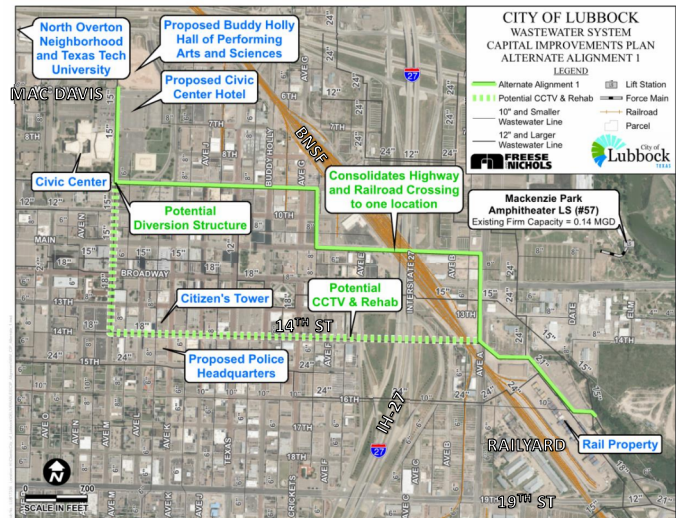
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## STUDY – GREEN ALIGNMENT

Green:

- ✓ Avoids 14<sup>th</sup> Street  
Citizen's Center  
Brick Paving
- ✓ Less Flow – Smaller Pipe
- ✓ Ex 12"/15" – Local Sewer
- ✓ Bore length ~800 LF

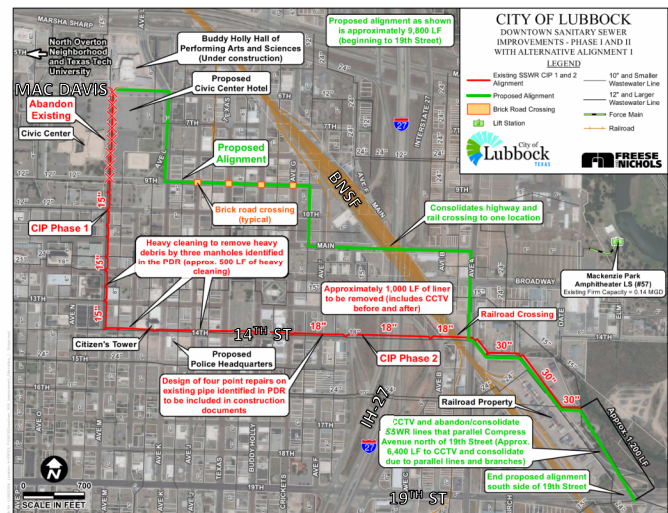


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## STUDY – RECOMMENDED ALIGNMENT

Green:

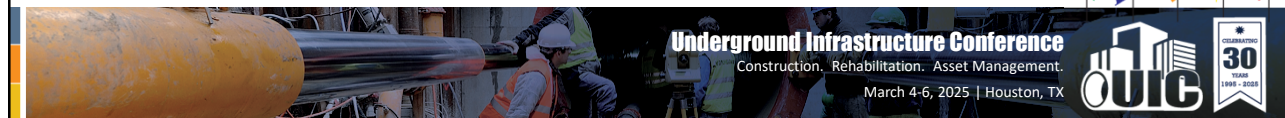
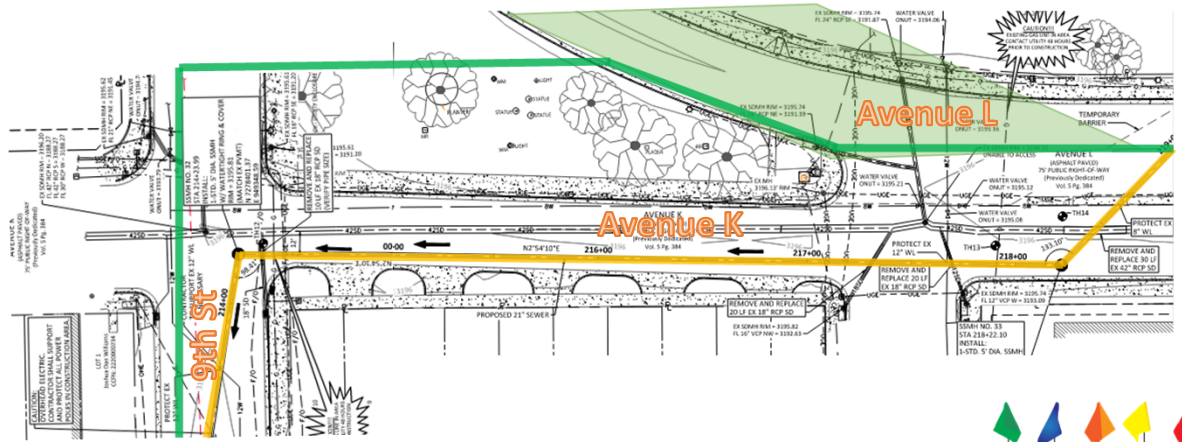
- ✓ Shortest Length
- ✓ Smallest Pipe Diameter
- ✓ Lowest OPCC
- ✓ Combined TxDOT/RR Crossing



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# PUBLIC WORKS COORDINATION

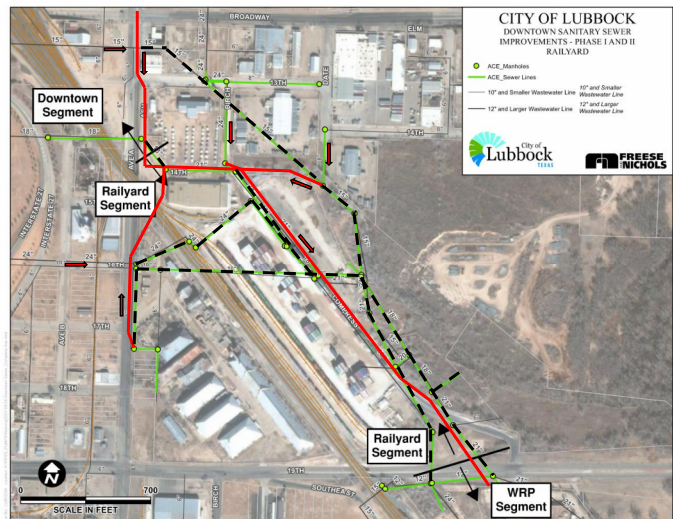
- ✓ Avenue L/K ongoing project



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# RAILYARD 'CLEANUP'

- ✓ Combine into single interceptor line
- ✓ Abandon existing
- ✓ Pick up all services
- ✓ CCTV existing for confirmation



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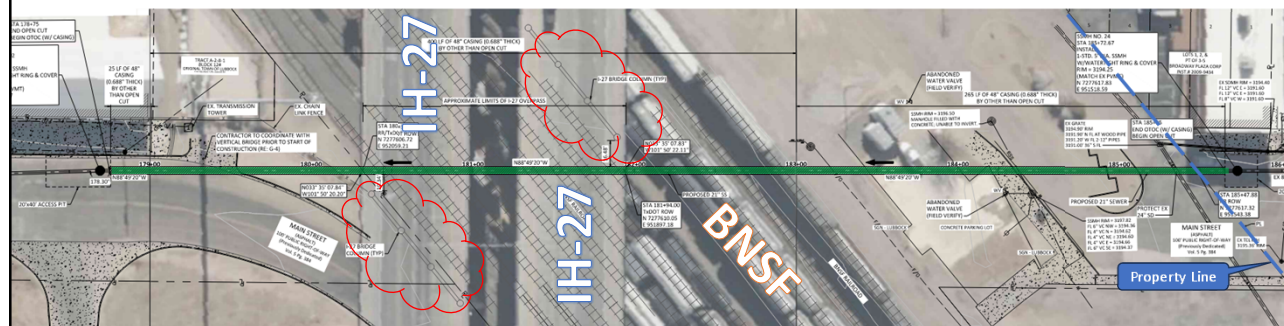
# TXDOT/RAILROAD BORE CROSSING

- ✓ ~700' bore
- ✓ Installation methods
  - Horizontal auger
  - Pipe jacking
  - Guided boring
- ✓ Oversize casing
  - 21" carrier inside 48" steel casing
- ✓ Horizontal/vertical constraints



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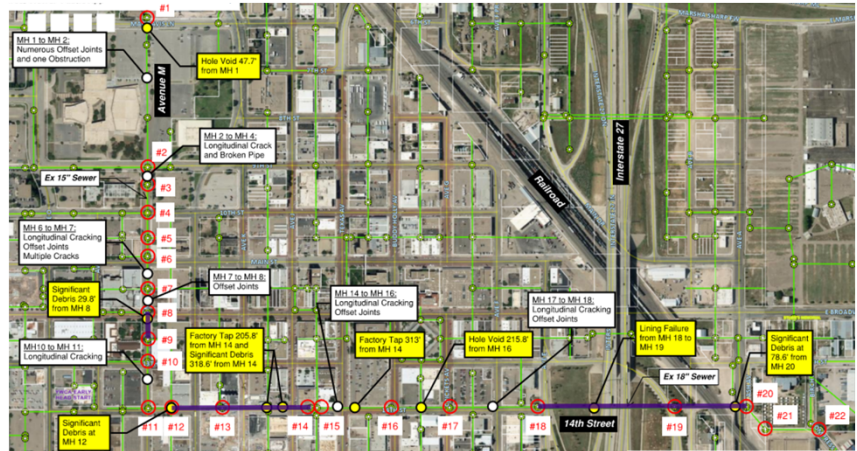
# TXDOT/RAILROAD BORE CROSSING



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## REHAB DOWNSTREAM SEGMENT

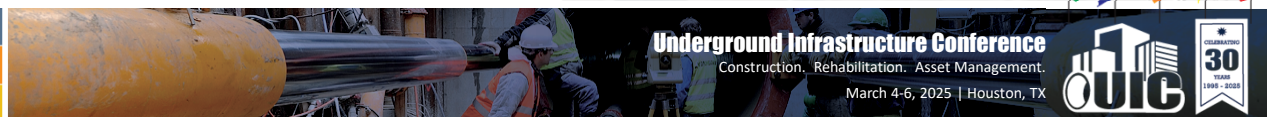
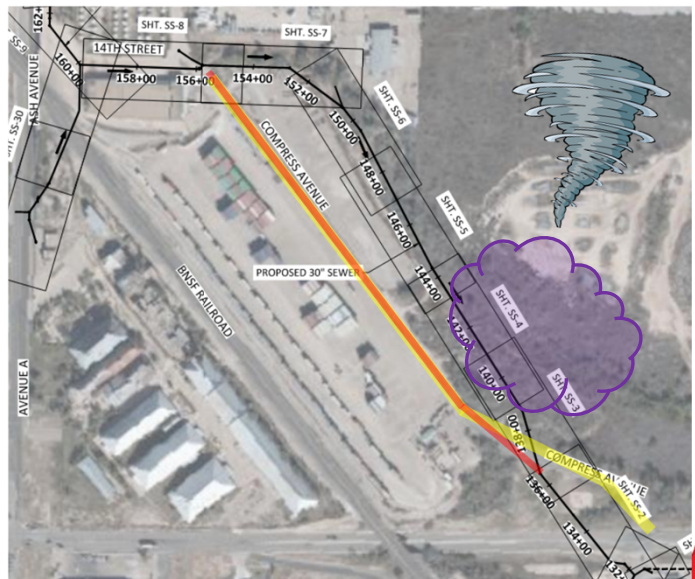
- ✓ Included repairs from condition assessment in design package



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## CONSTRUCTION ALIGNMENT MODIFICATION

- ✓ Designed outside of Compress Ave in available City owned property

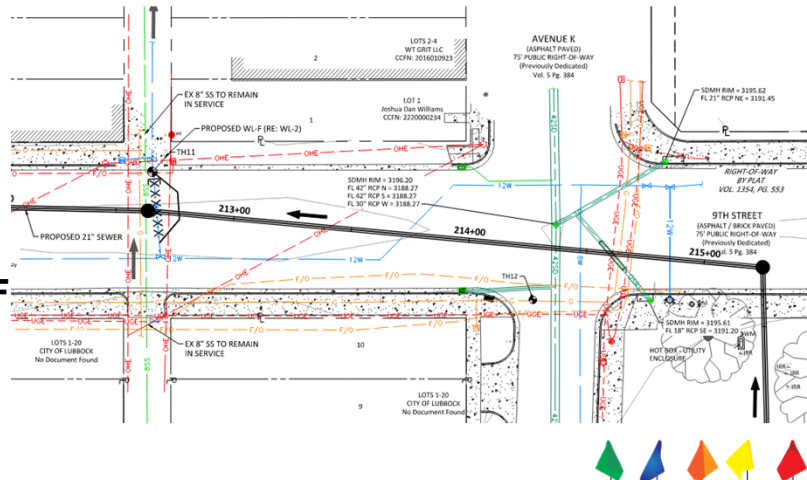


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## CONSTRUCTION – FRANCHISE UTILITIES

- ✓ Utility congestion in downtown
- ✓ SUE/811 locates
- ✓ Minimal damages
- ✓ 11,500 Total Sewer LF
  - Only hit 2



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## CONSTRUCTION – FRANCHISE UTILITIES

- ✓ Utility congestion in downtown
- ✓ SUE/811 locates
- ✓ Minimal damages



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## CONSTRUCTION

### FAILURES IN EXISTING SEWER SYSTEM

- ✓ Existing manhole base failure
- ✓ Ongoing testing of new MHs/pipe
- ✓ Longer bypass

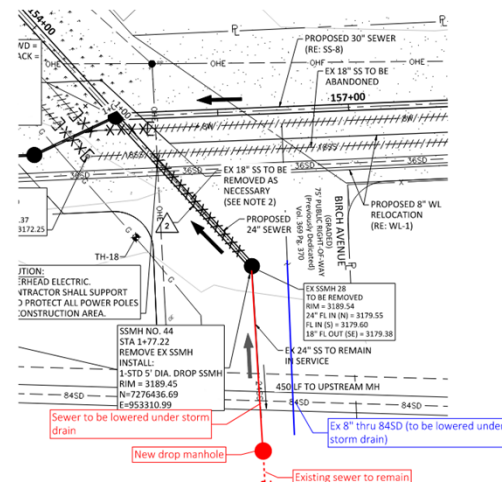


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## CONSTRUCTION

### STORM DRAIN CONFLICTS

- ✓ Existing sewer and water inside 84" storm found during bypass pumping

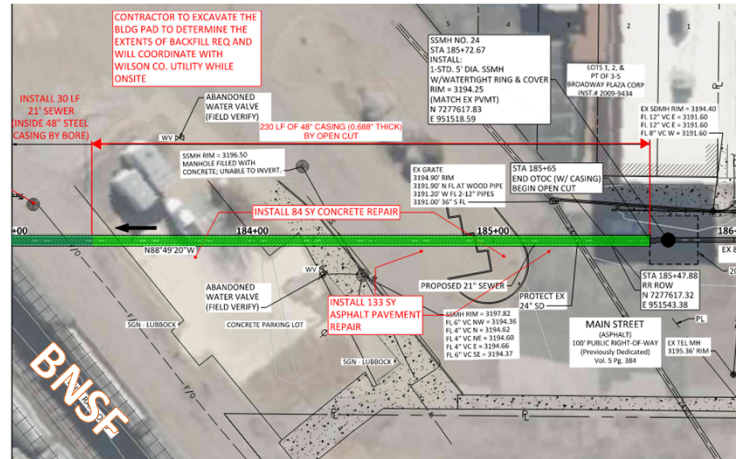


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## CONSTRUCTION RAILROAD CROSSING



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## CONSTRUCTION 2 CONTRACTOR CREWS

- ✓ Required survey verification
- ✓ Bores were separate tunneling crew
- ✓ Saved 10-12mo construction time



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# Questions?



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