

Under the River and Through the Pipelines

Threading Needles with a Relief Interceptor

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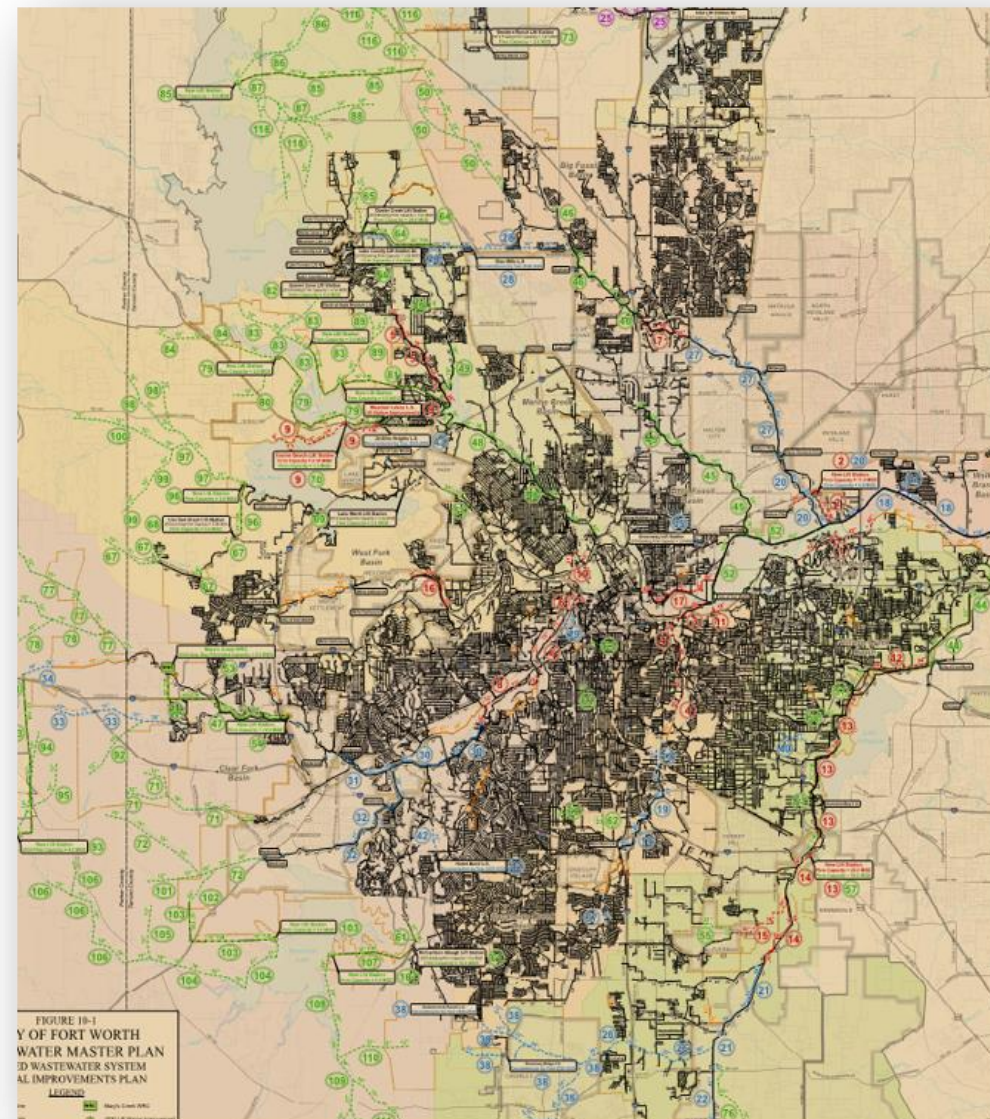


Lockwood, Andrews
& Newnam, Inc.
A LEO A DALY COMPANY



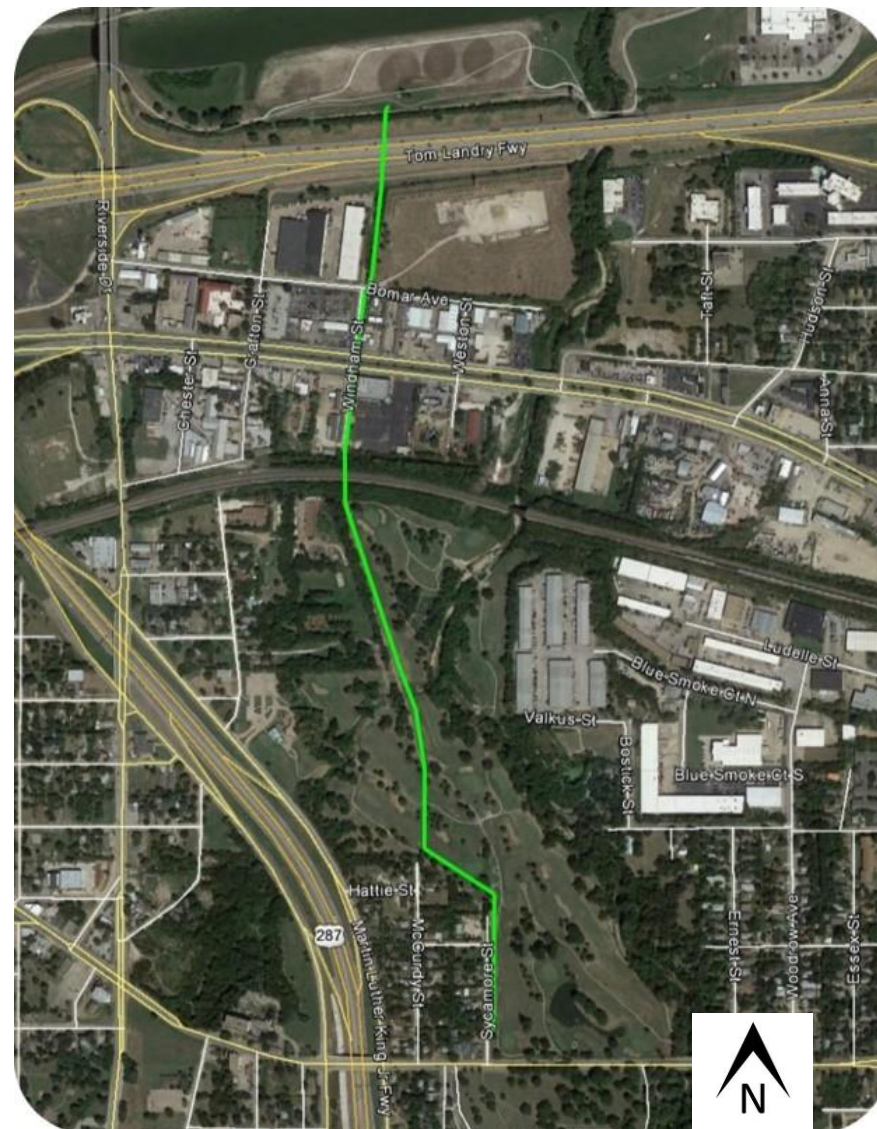
Fort Worth: Water Department

- 13th Largest City in the US.
- Water and sewer services to +1.2 million
- 497 MGD water treatment capacity
- 166 MGD wastewater treatment capacity
- 3,303 miles of wastewater pipe
- +255 miles of 24-inch or larger pipe



Sycamore Creek Interceptor

- Existing 48-, 54- & 60-Inch Interceptor (1961)
- Planned Rehabilitation
- Parallel Relief Capacity Required
- Multiple Phases Required
- 2030 Combined Flow = 79 MGD

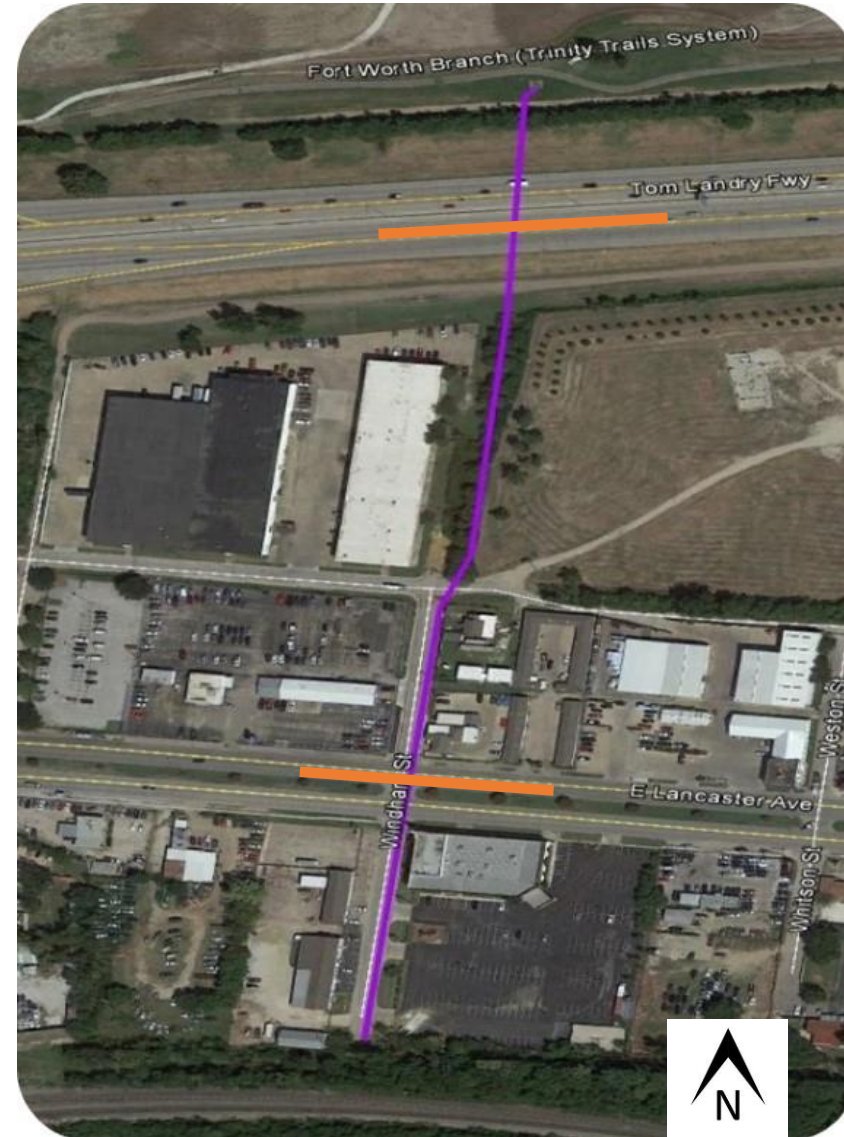


Sycamore Creek Stakeholders

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- This aerial map illustrates the Sacramento-San Joaquin River Delta, highlighting the Delta Levee System and the Delta Dike System. The Sacramento River is visible on the left, and the San Joaquin River is on the right. The Delta Levee System is shown as a series of red dashed lines, while the Delta Dike System is shown as a series of yellow dashed lines. The map also includes labels for 'Sacramento River', 'San Joaquin River', 'Delta Levee System', and 'Delta Dike System'. A north arrow is located in the top left corner.

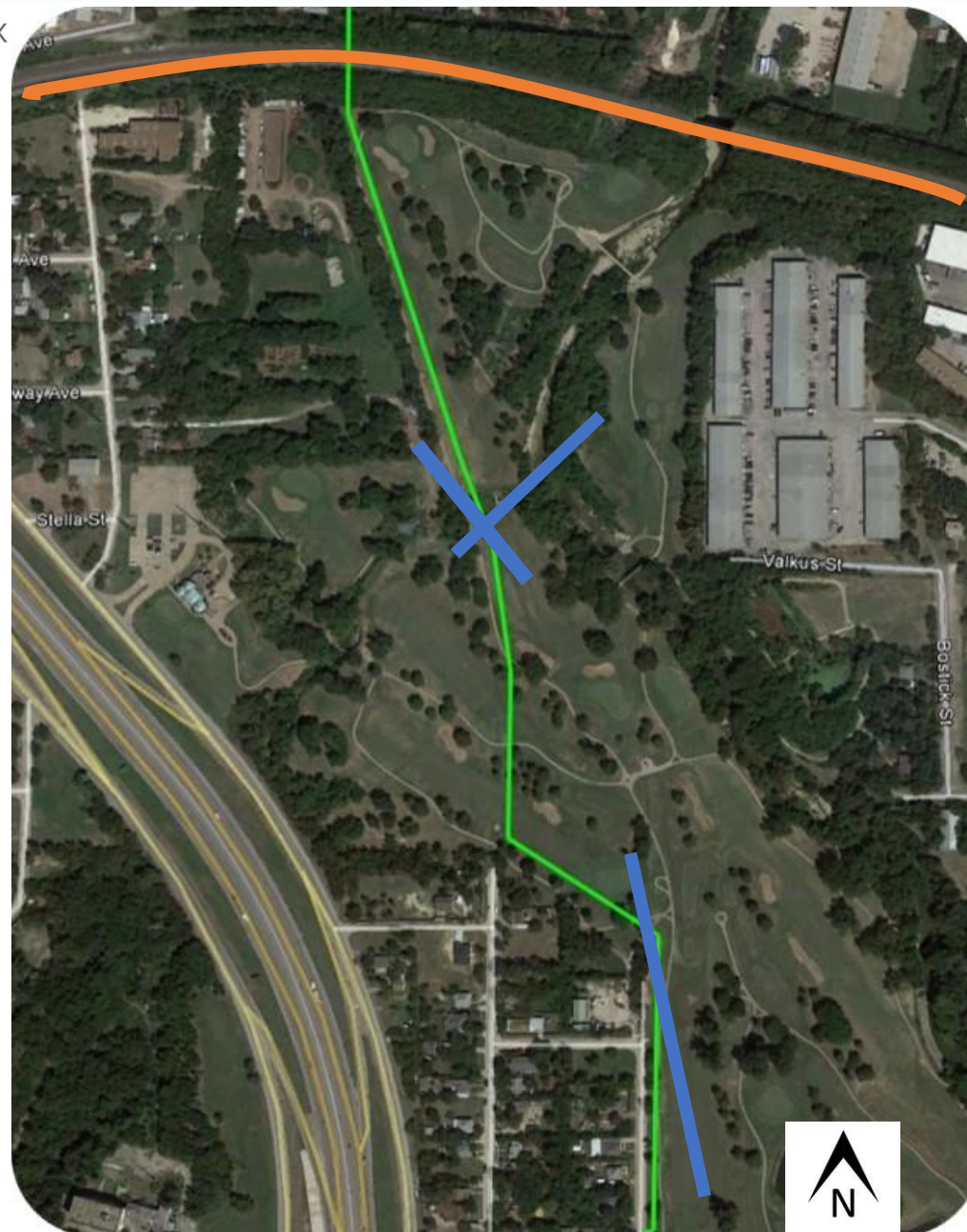
Sycamore Creek: Phase 1

- 1,800 LF 66-inch FRP
- Start in TRVA
- Two TxDOT Crossings
- Gas company easements
- 375 LF 84-inch Tunnel



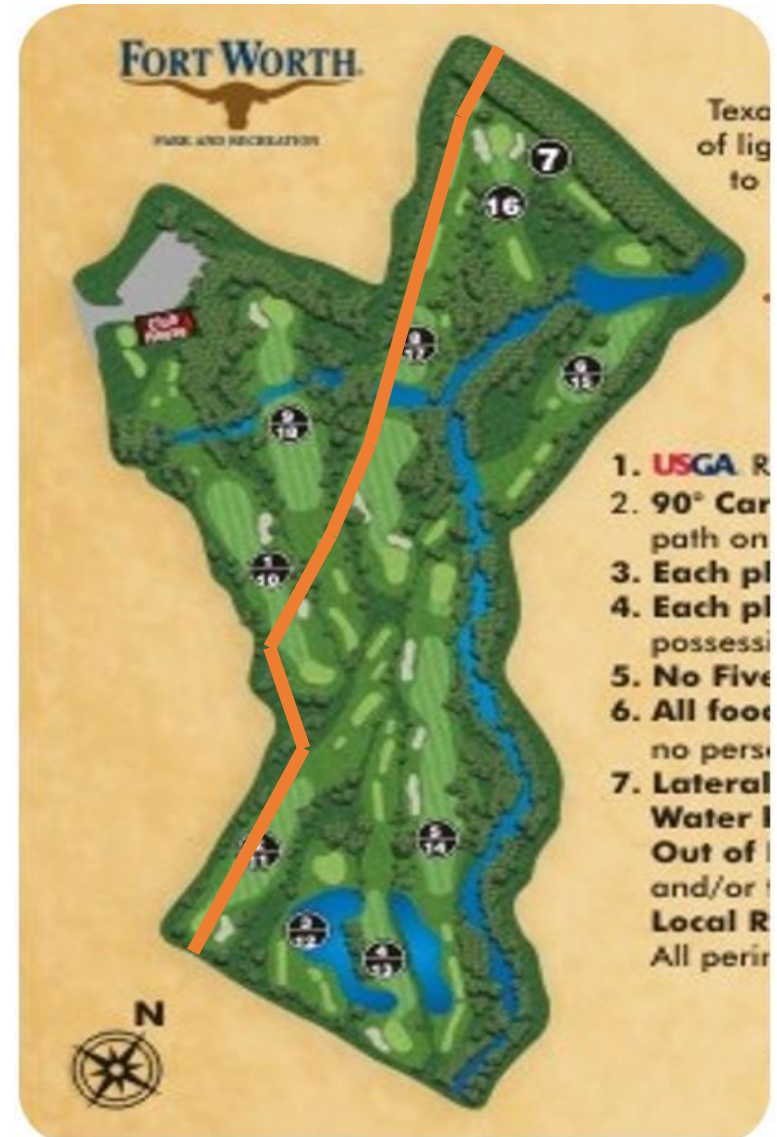
Sycamore Creek: Phase 2

- **3,650 LF 66- & 48-inch FRP**
- **265 LF UPRR Crossing**
- Sycamore Creek Municipal Golf Course
- **Gas / Petroleum Companies**
 - Koch Pipelines Company
 - Atmos Energy
 - Energy Transfer



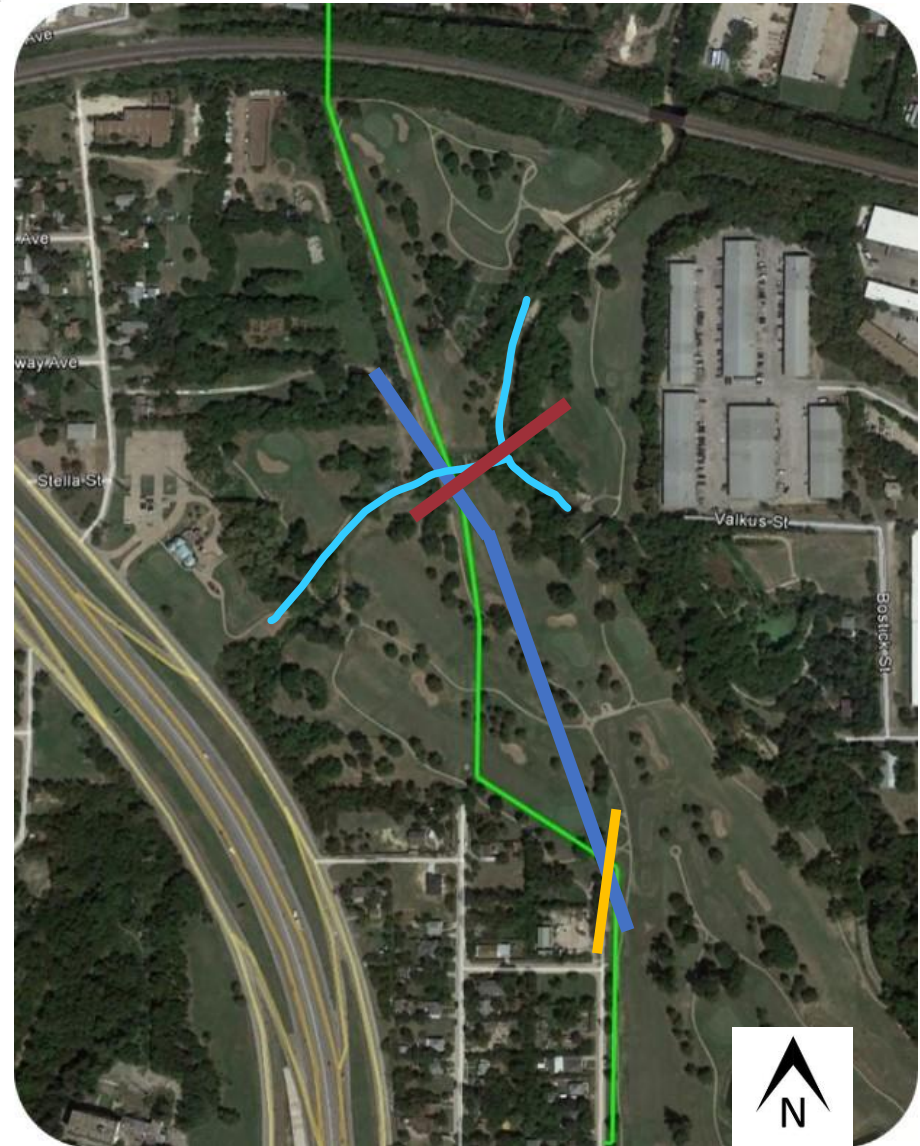
Sycamore Creek: Golf Course

- Municipal Course
- 9 hole course
- Two par 5 holes

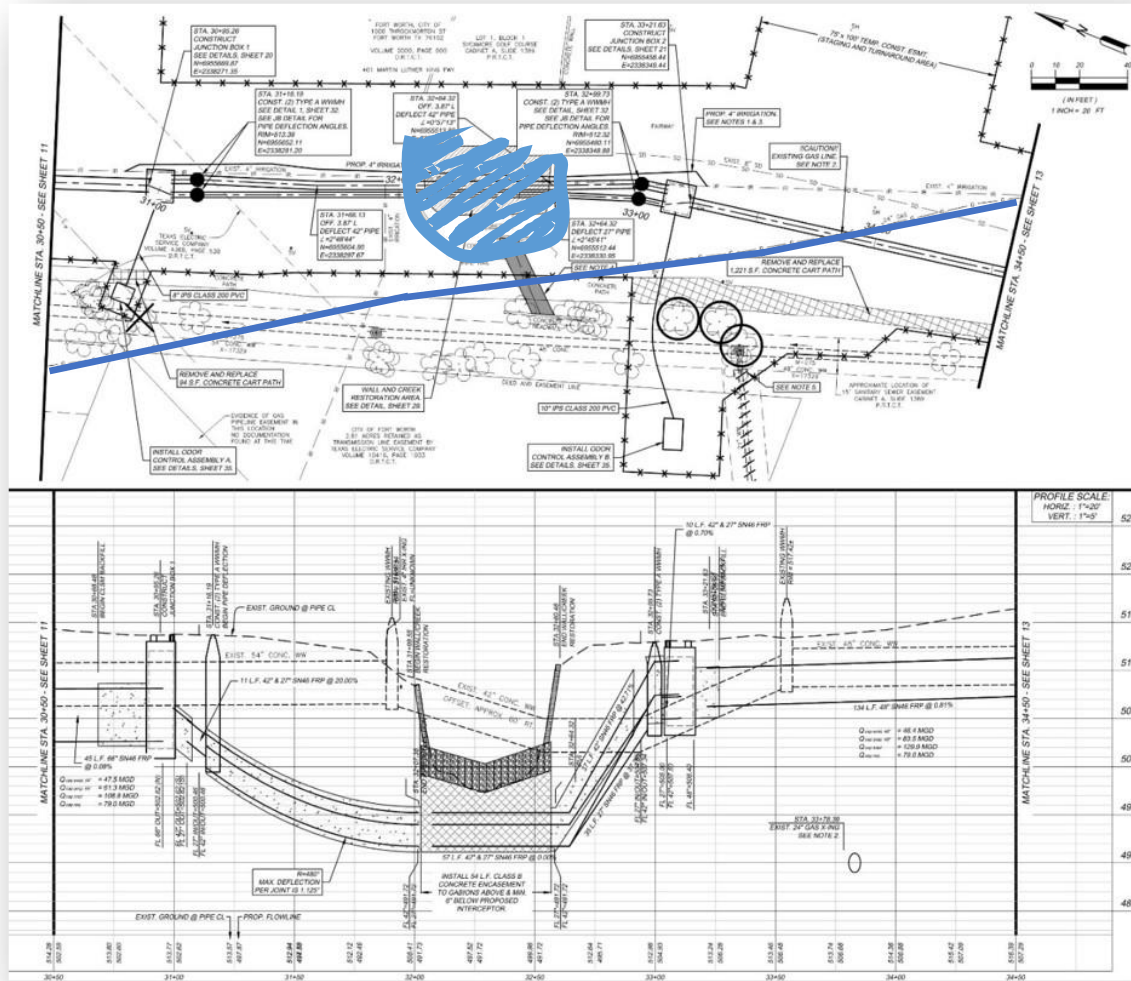


Sycamore Creek: Conflict Area

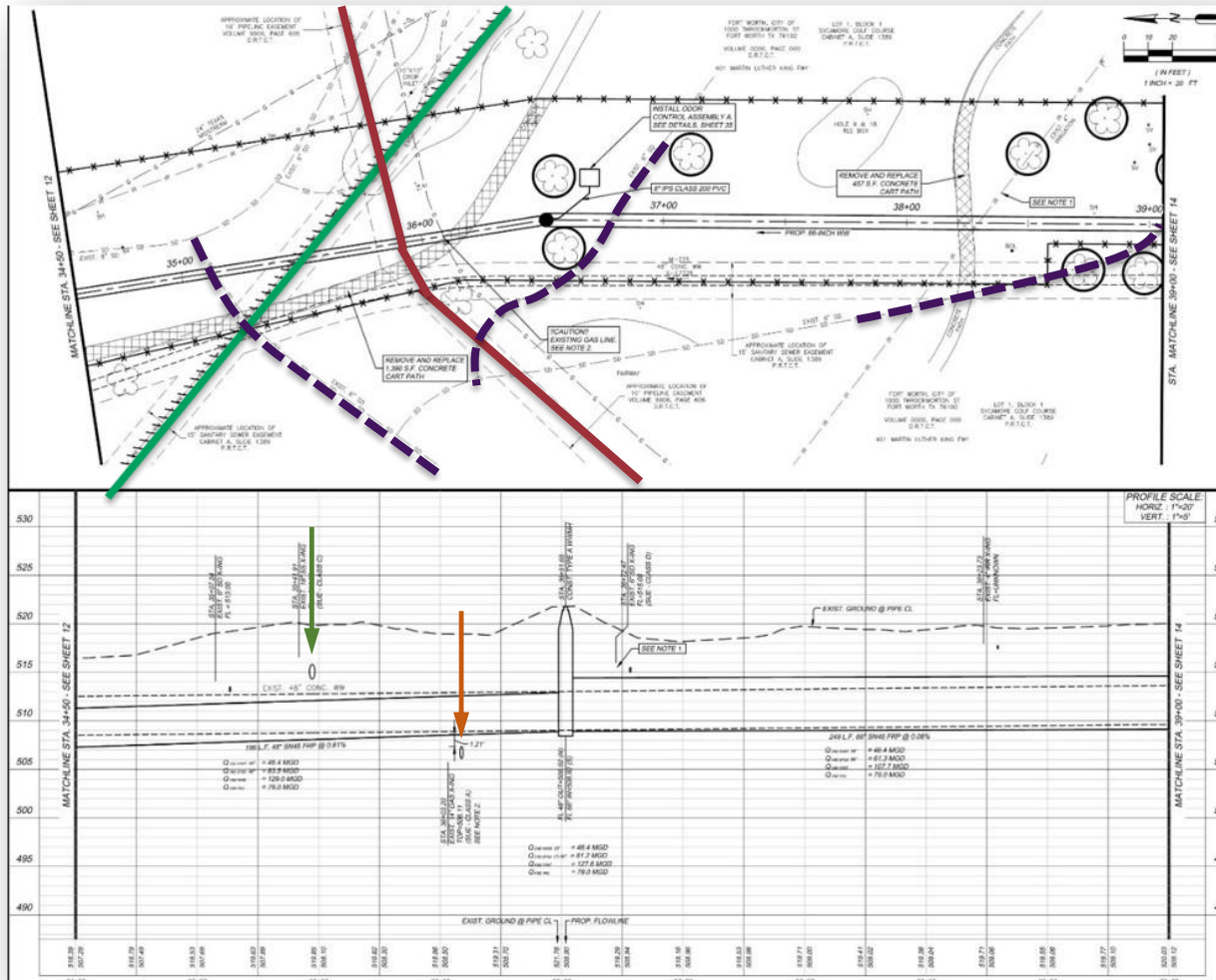
- **Proposed Interceptor**
- **Creek**
- **24-Inch Gas (Texas Midstream)**
- **14-Inch Petroleum (Koch Industries)**
- **10-Inch Gas (Energy Transfer)**
- **18-Inch Sanitary Sewer**
- 6 to 12-inch Drain Lines
- 1 to 4-inch Irrigation lines



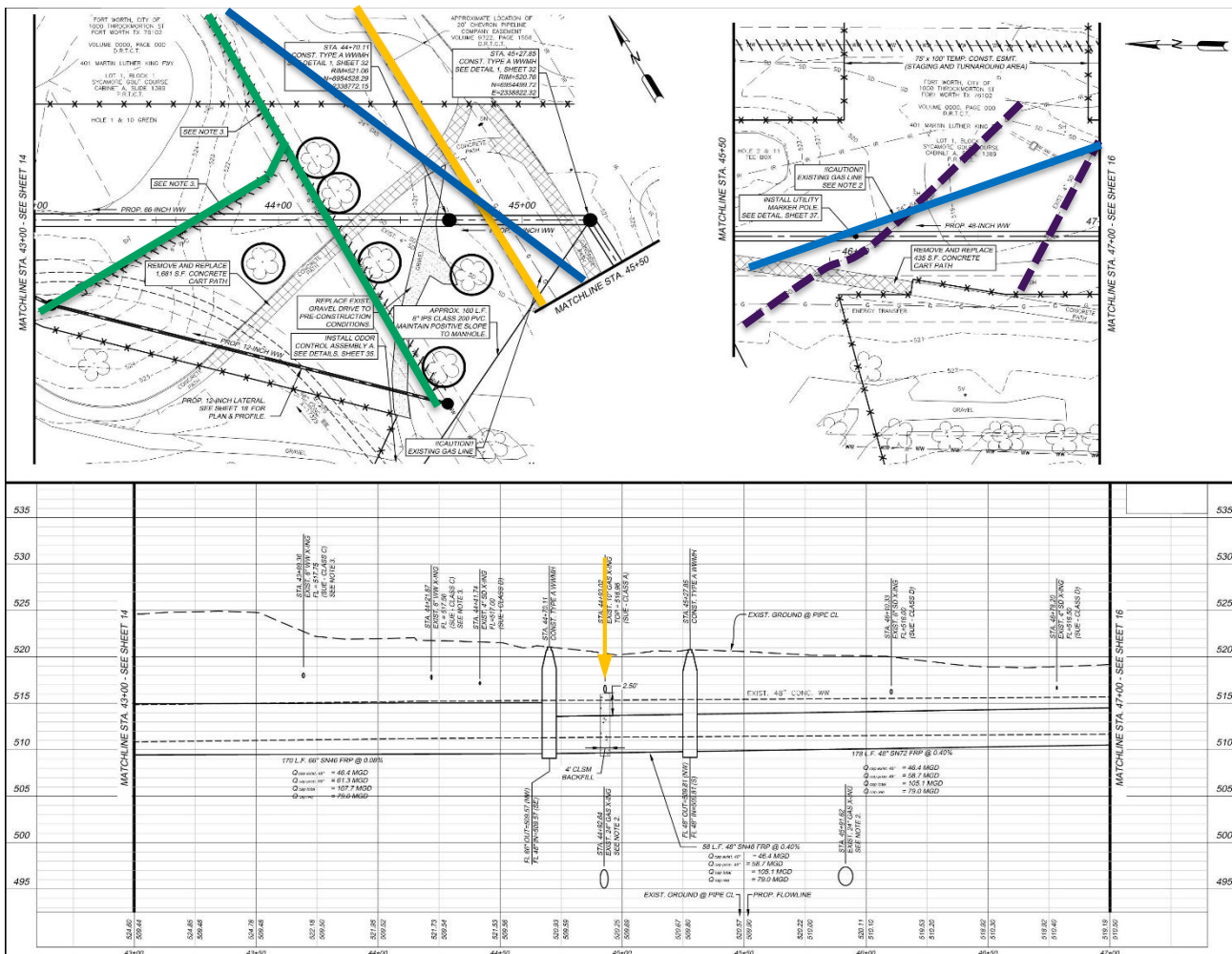
Solutions: Creek & 24-Inch Gas



Solutions: 14-Inch Petroleum & WW



Solutions: 24- & 10-Inch Gas



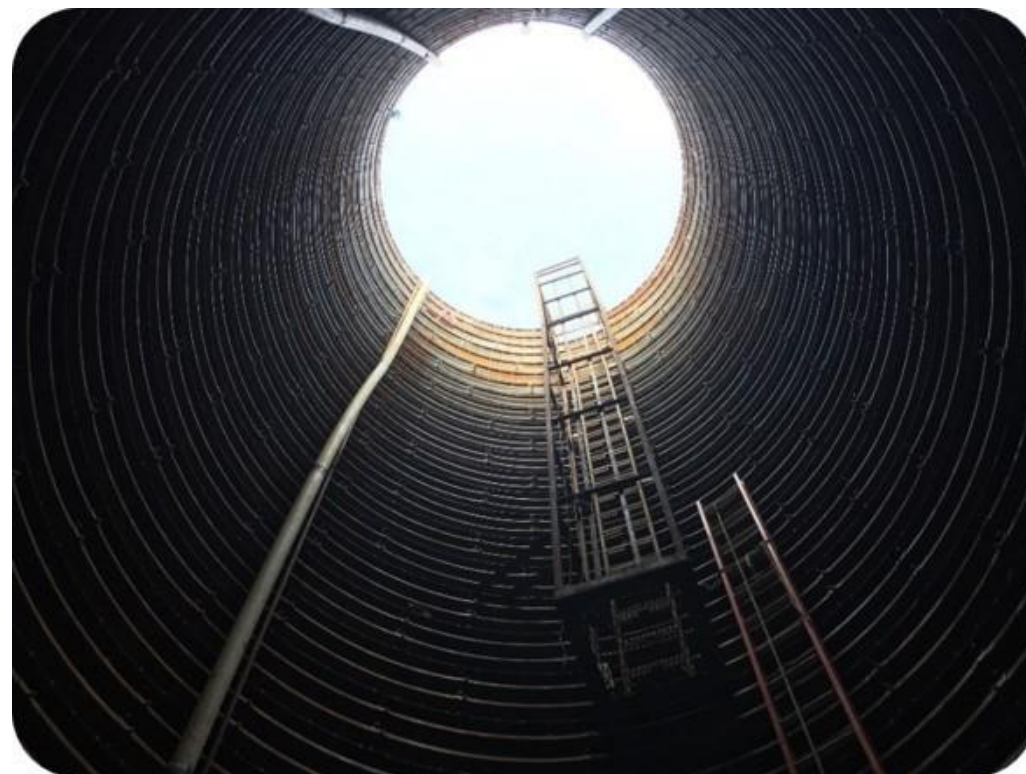
Sycamore Creek: Phase 3

- Approximately 6,630 LF 48-, 54-, 60-, and 66-inch FRP
- Sycamore Creek Historic Bridge
- 430 LF TxDOT Crossing
- Sycamore Creek & Cobb Parks
- 2 – Sycamore Creek Crossings (Double Barrell Siphon)
- Gas / Petroleum Company
 - Energy Transfer



Current Status

- Phase 1
 - In Construction
 - Substantially Complete
- Phase 2
 - 3,650 LF 27-, 42-, 48- & 66-Inch FRP
 - Construction Beginning in February
- Phase 3
 - Currently in Design





Final Thoughts & Takeaway

- Don't assume reduced obstacles when paralleling existing line.
- Don't limit the size of your tool box.
- Changing pipe sizes can expand the options.
- Communicate early with other utilities and/or entities.



Key Team Members



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Questions?

