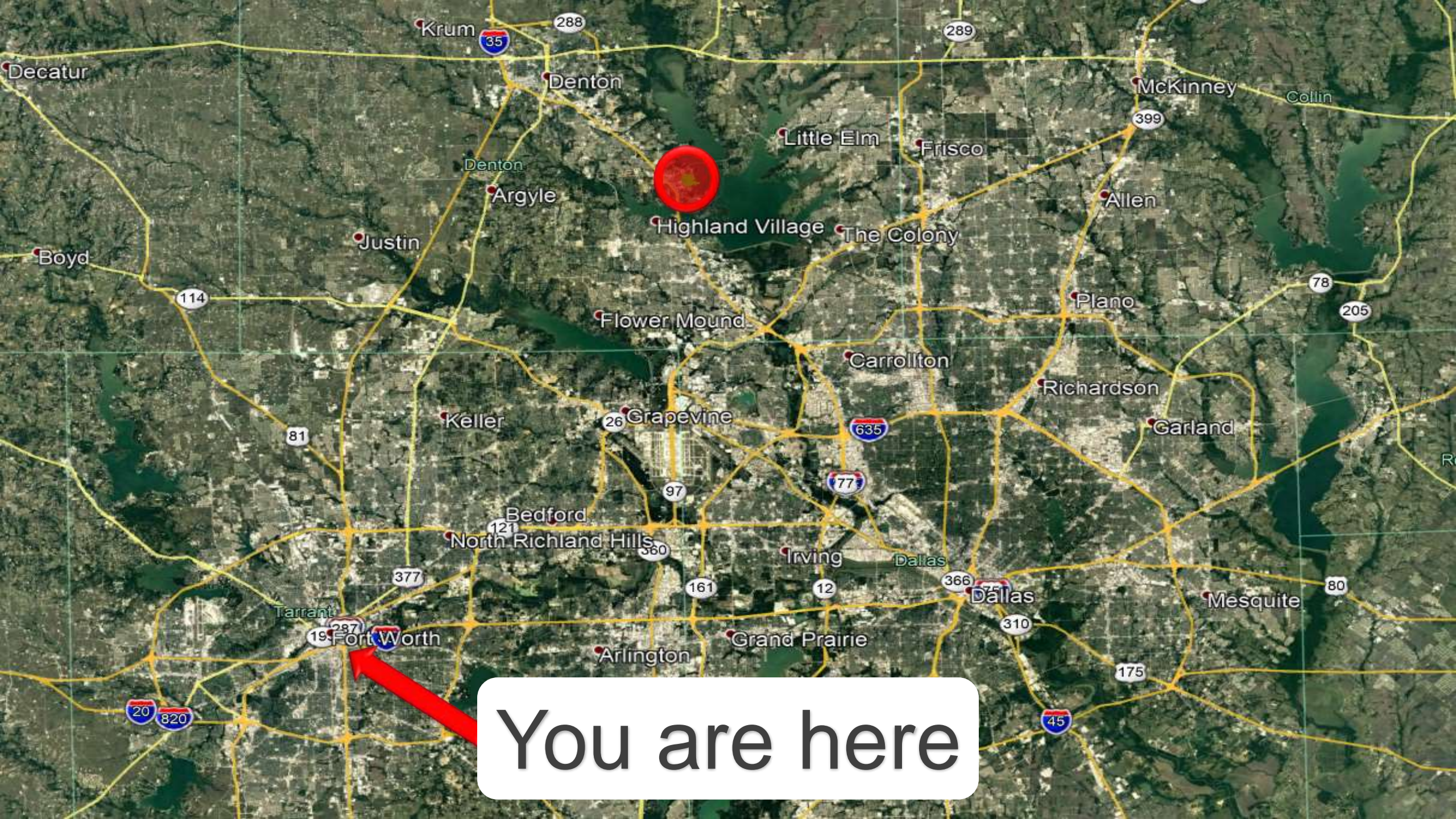




Between the USACE and a Hard Place: How to Build a Sewer Collector and Lift Station Along Lake Lewisville

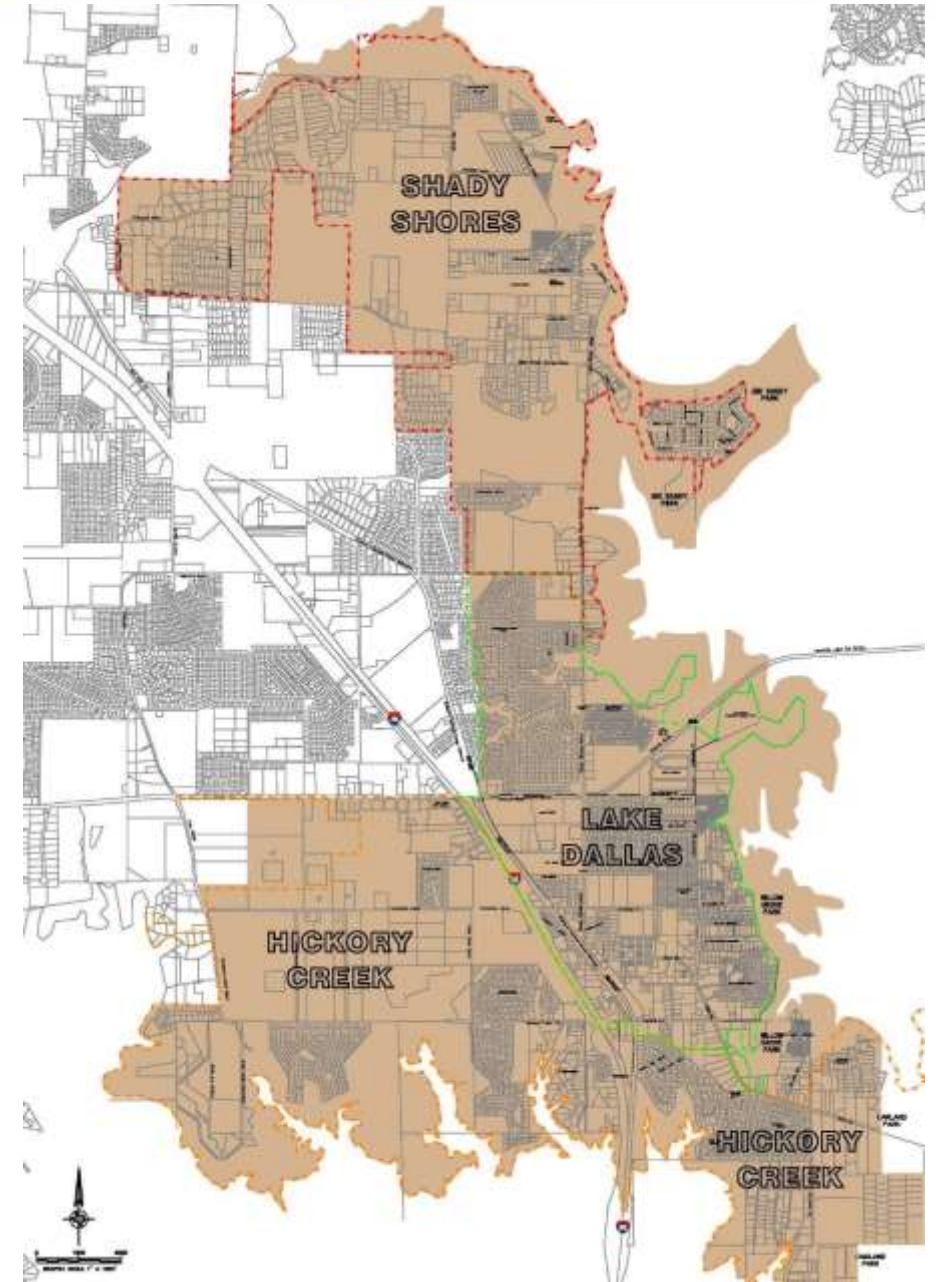


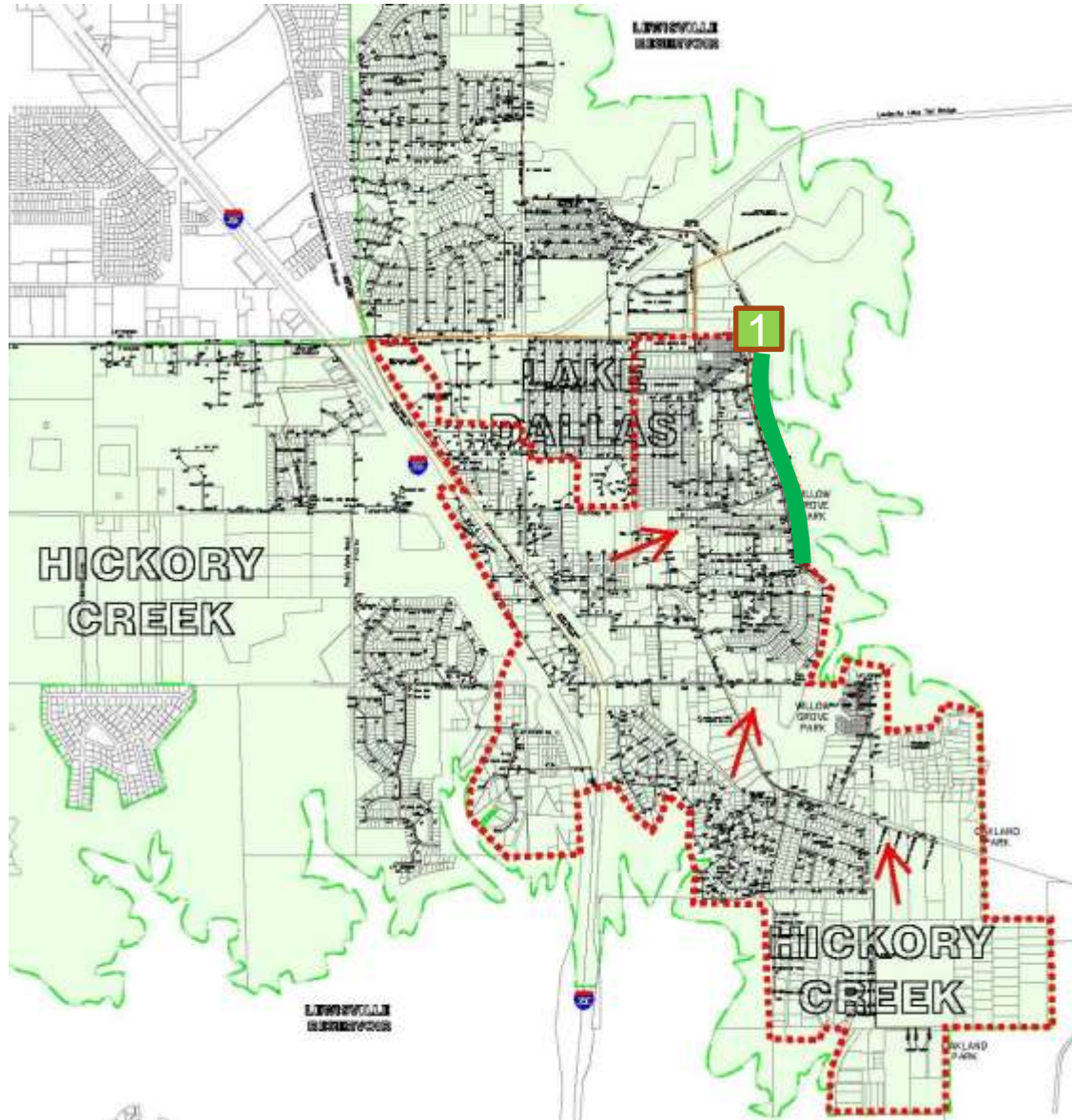
Kimley»Horn



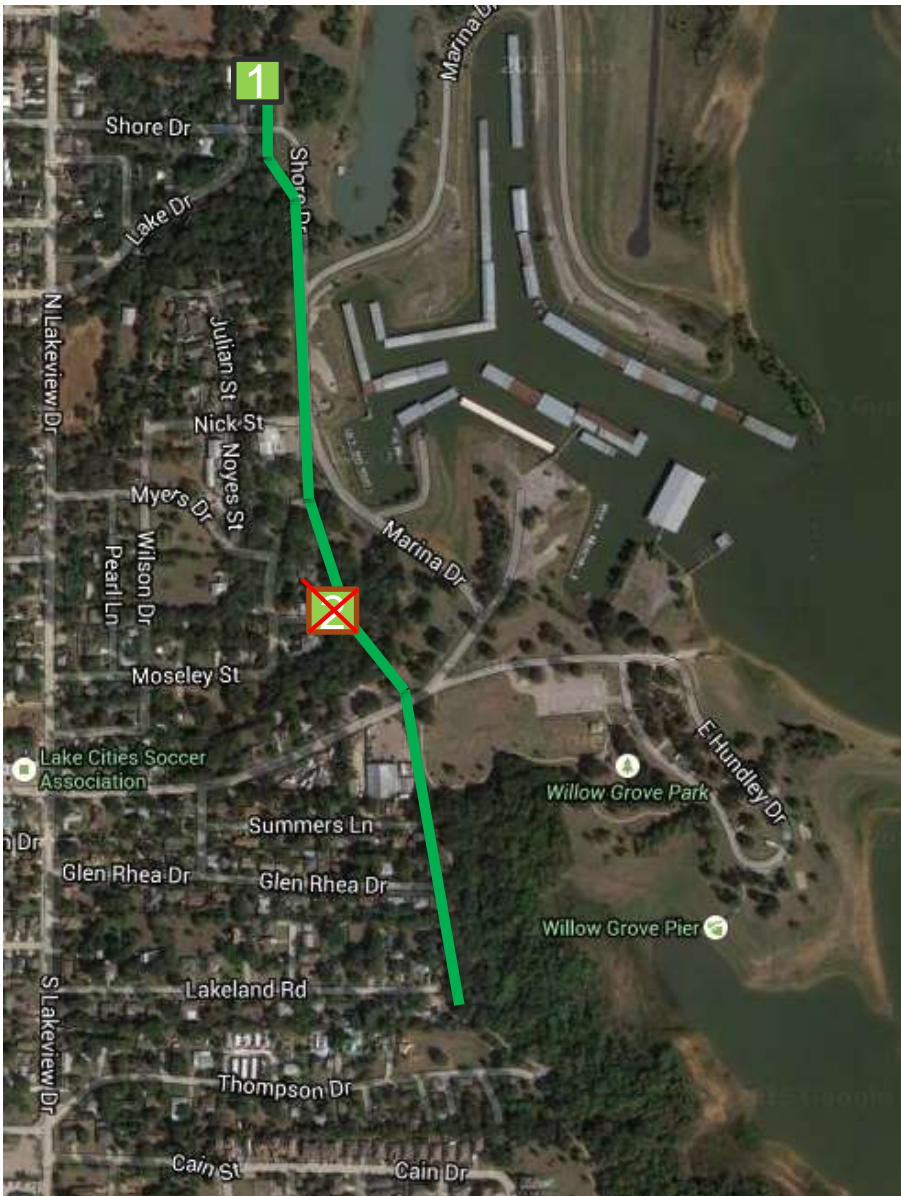
You are here

Sanitary Sewer Service Area





Project Sewer Basin

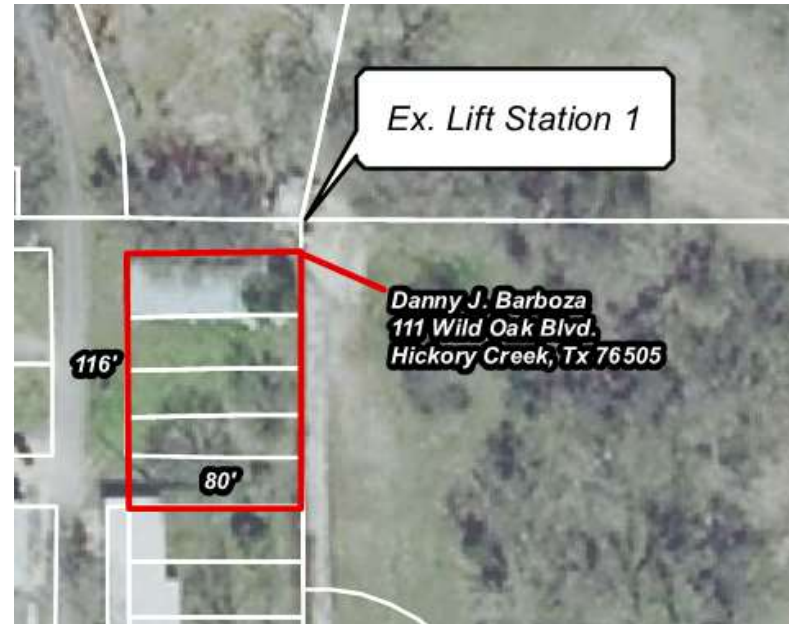


Overall Project

- Sanitary Sewer Interceptor
 - 3,800 LF of 21-inch
 - Replaces (2) - 10/12-inch lines
- Lift Stations
 - Lift Station 1 – Replacement
 - Lift Station 2 – Abandonment

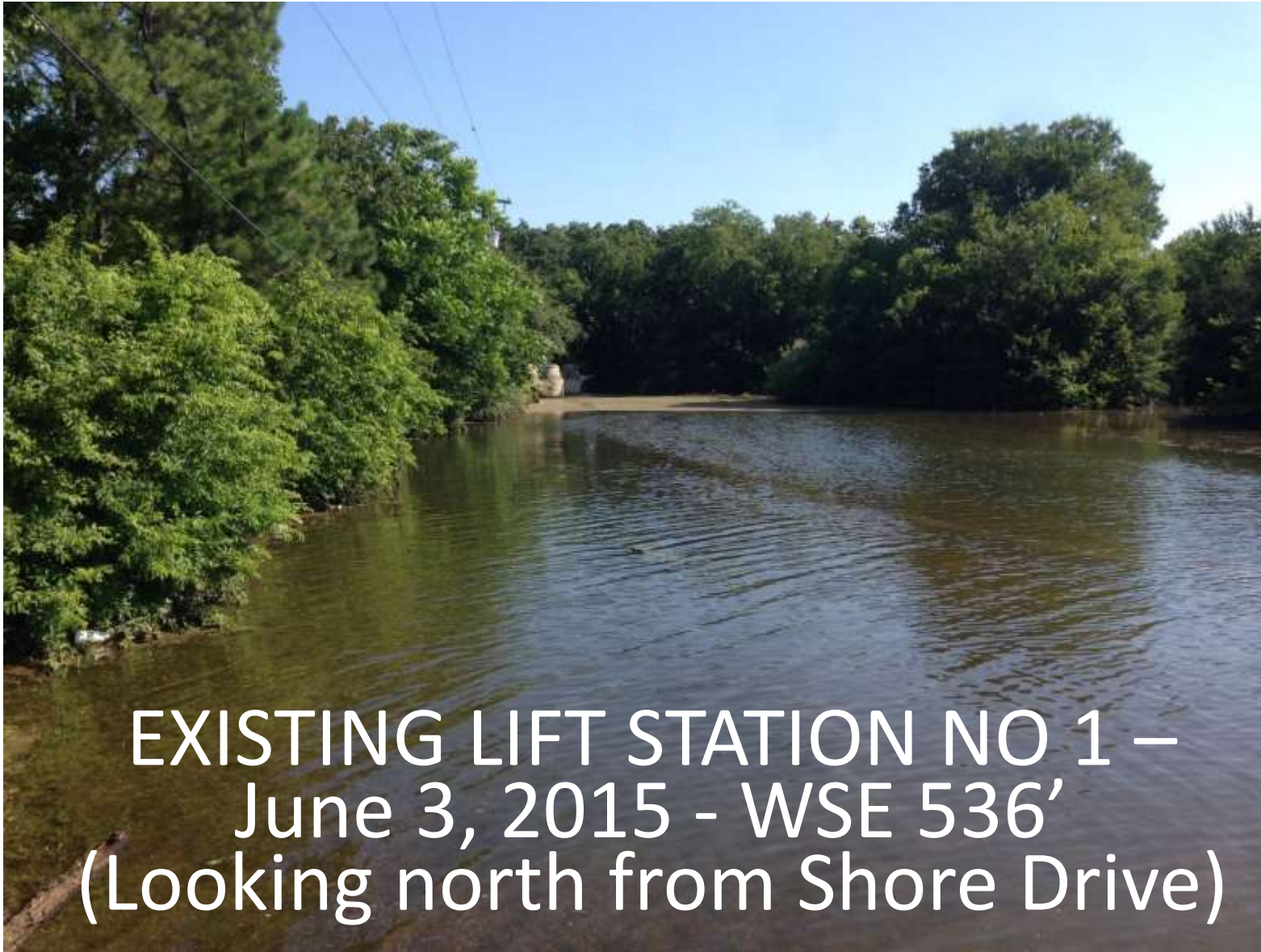
Design Challenges

- USACE Permitting
 - Tree Preservation (3:1 Ratio)
 - No Loss of Valley Storage in the Floodplain and No Fill above 537'
- Coordination with USACE Licensees
 - Lakeview Marina – Access
 - Lake Dallas – Trail
- Property Purchase/Replat



USACE Easement Schedule

- Project Kickoff – Feb 2014
- First meeting with USACE – Oct 2014
- Second meeting with USACE – Feb 2015
- Wet Spring leads to 100-year flood elevation – May 2015
- Preliminary Submittal – Oct 2015
- Final Submittal – Feb 2016
- Resend Tree Mitigation Plans – May 2016
- Comments received from USACE – Dec 2016
- USACE Easements Recorded – May 2017



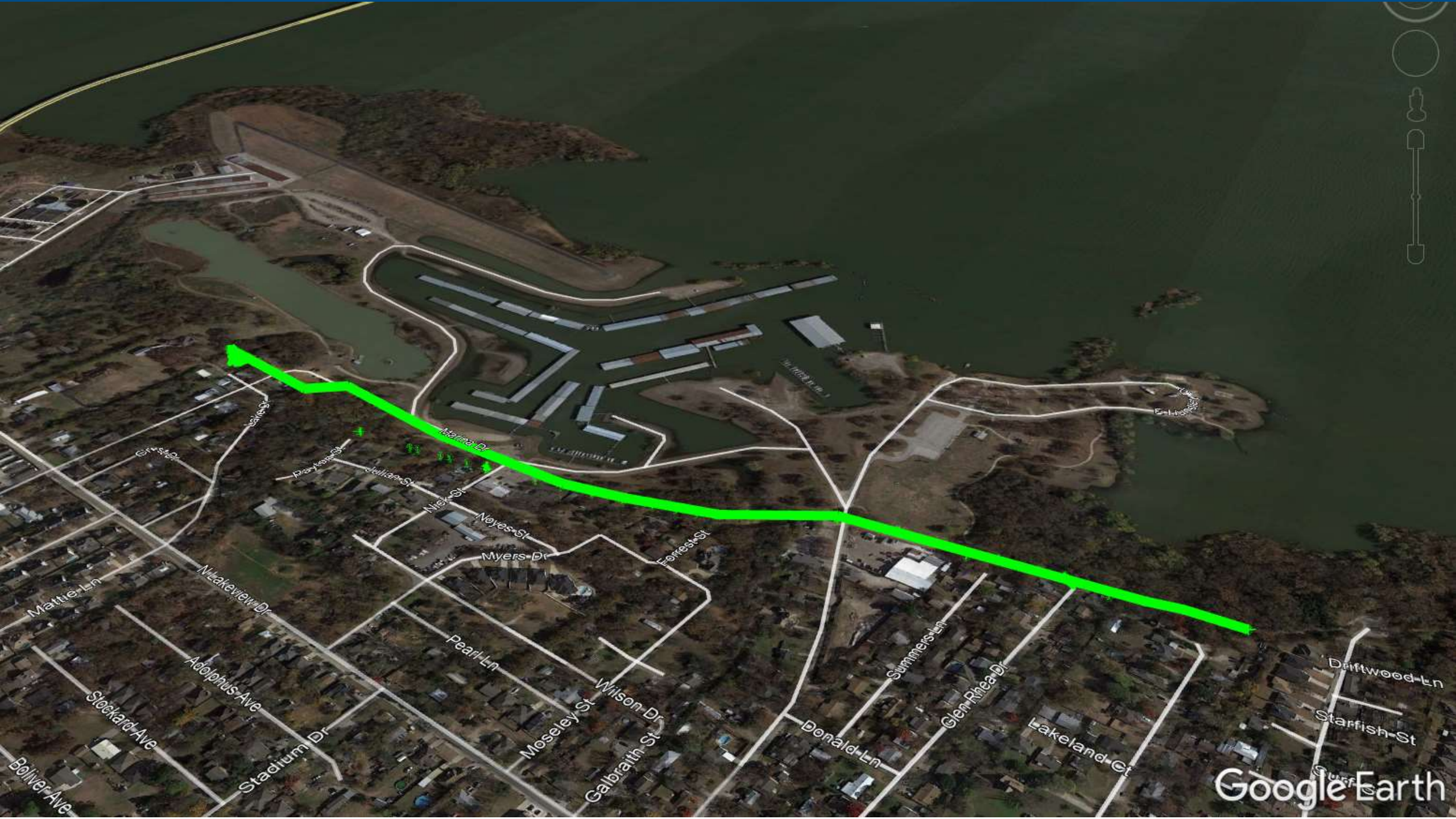
EXISTING LIFT STATION NO 1 –
June 3, 2015 - WSE 536'
(Looking north from Shore Drive)

UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX





Map labels include:

- Marina Dr
- Julian St
- Niles St
- Noyes St
- Myers Dr
- Forest St
- Summers Ln
- Glen Ridge Dr
- Lakeland Ct
- Driftwood Ln
- Starfish St
- Wilson Dr
- Moseley St
- Galbraith St
- Donald Ln
- Stadium Dr
- Adolphus Ave
- Stockard Ave
- Boliver Ave
- Mattie Ln
- Wakeview Dr
- Prayton St
- Gravel Dr
- Elm St
- E-I



Competitive Sealed Proposal

PRICE: (Lowest Price/Current Proposal Price) x Pts. X Weight

Contractor	Total Base Bid with Additive Alternate	%	Points	Weight	Score
Black Stag, LLC	\$2,537,287.00	1.00	100	65%	65.00
Mountain Cascade of Texas	\$2,922,139.00	0.87	100	65%	56.44
Joe Funk Construction, Inc.	\$3,370,599.00	0.75	100	65%	48.93
Atkins Bros. Equip. Co. Inc.	\$3,377,566.00	0.75	100	65%	48.83
Wilson Contractor Services, LLC	\$3,438,834.84	0.74	100	65%	47.96
ARK Contracting Services, Inc.	\$3,566,262.00	0.71	100	65%	46.25
Red River Construction Co.	\$4,373,491.00	0.58	100	65%	37.71
S&J Construction Co. Inc.	\$7,343,877.31	0.35	100	65%	22.46

QUALIFICATIONS: Points x Weight

Contractor	Points*	Weight	Score
Black Stag, LLC	47.0	35%	16.45
Mountain Cascade of Texas	95.0	35%	33.25
Joe Funk Construction, Inc.	32.0	35%	11.20
Atkins Bros. Equip. Co. Inc.	63.0	35%	22.05
Wilson Contractor Services, LLC	67.0	35%	23.45
ARK Contracting Services, Inc.	66.0	35%	23.10
Red River Construction Co.	84.0	35%	29.40
S&J Construction Co. Inc.	79.0	35%	27.65

* A maximum of 100 points.

OVERALL EVALUATION

Contractor	Total Score	Ranking
Black Stag, LLC	81.45	2
Mountain Cascade of Texas	89.69	1
Joe Funk Construction, Inc.	60.13	7
Atkins Bros. Equip. Co. Inc.	70.88	4
Wilson Contractor Services, LLC	71.41	3
ARK Contracting Services, Inc.	69.35	5
Red River Construction Co.	67.11	6
S&J Construction Co. Inc.	50.11	8

Best Value Offer

Past Experience will be specifically scored according to the following categories:

1. Tri-plex submersible lift station with cast-in-place wet well construction deeper than 25-feet,
2. Sustained dewatering operations in high groundwater conditions,
3. 21-inch gravity sanitary sewer installation, and
4. Working areas in USACE jurisdiction and floodplain limits, with tree planting and mitigation requirements

Construction Schedule

- CSP Advertisement – October 2017
- Proposal Evaluations – Nov 2017
- Project Awarded and Construction NTP – March 2018
 - Construction duration – March 2018 – March 2019
- 2018 region's 2nd wettest year on record
 - Fall 2018 wettest fall on record (nearly 30-inches in two months)
 - ==> delays
- Substantial Completion – September 2019
- Final Project Completion – January 2020

UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX



UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX

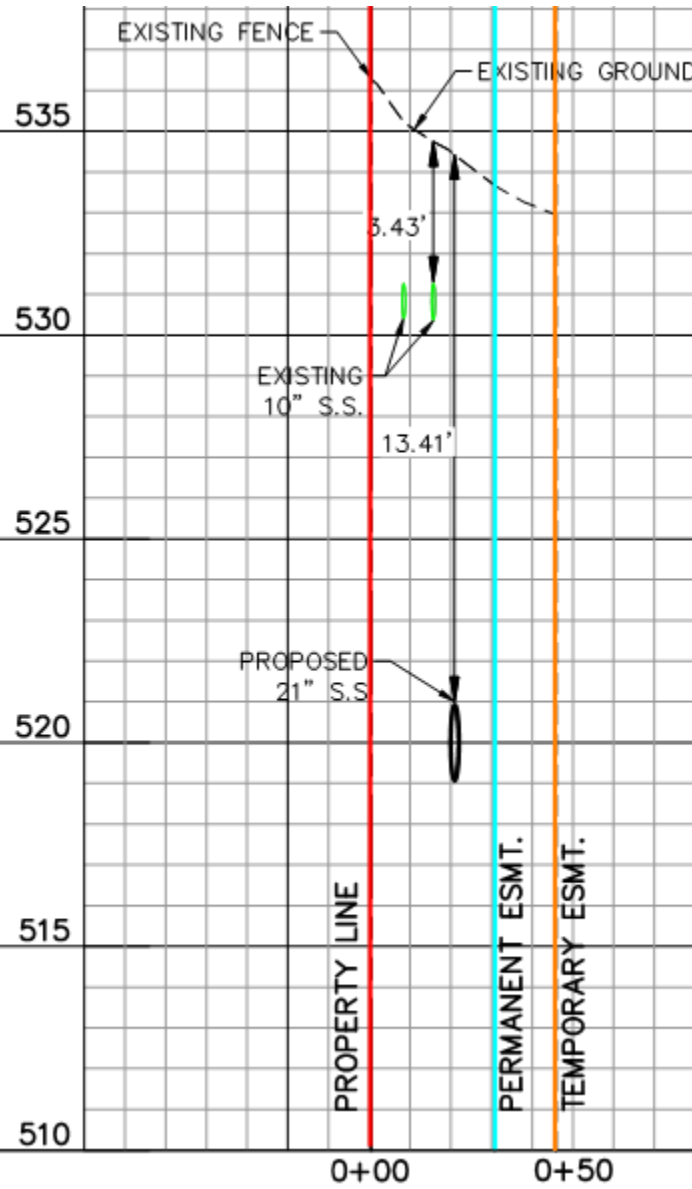
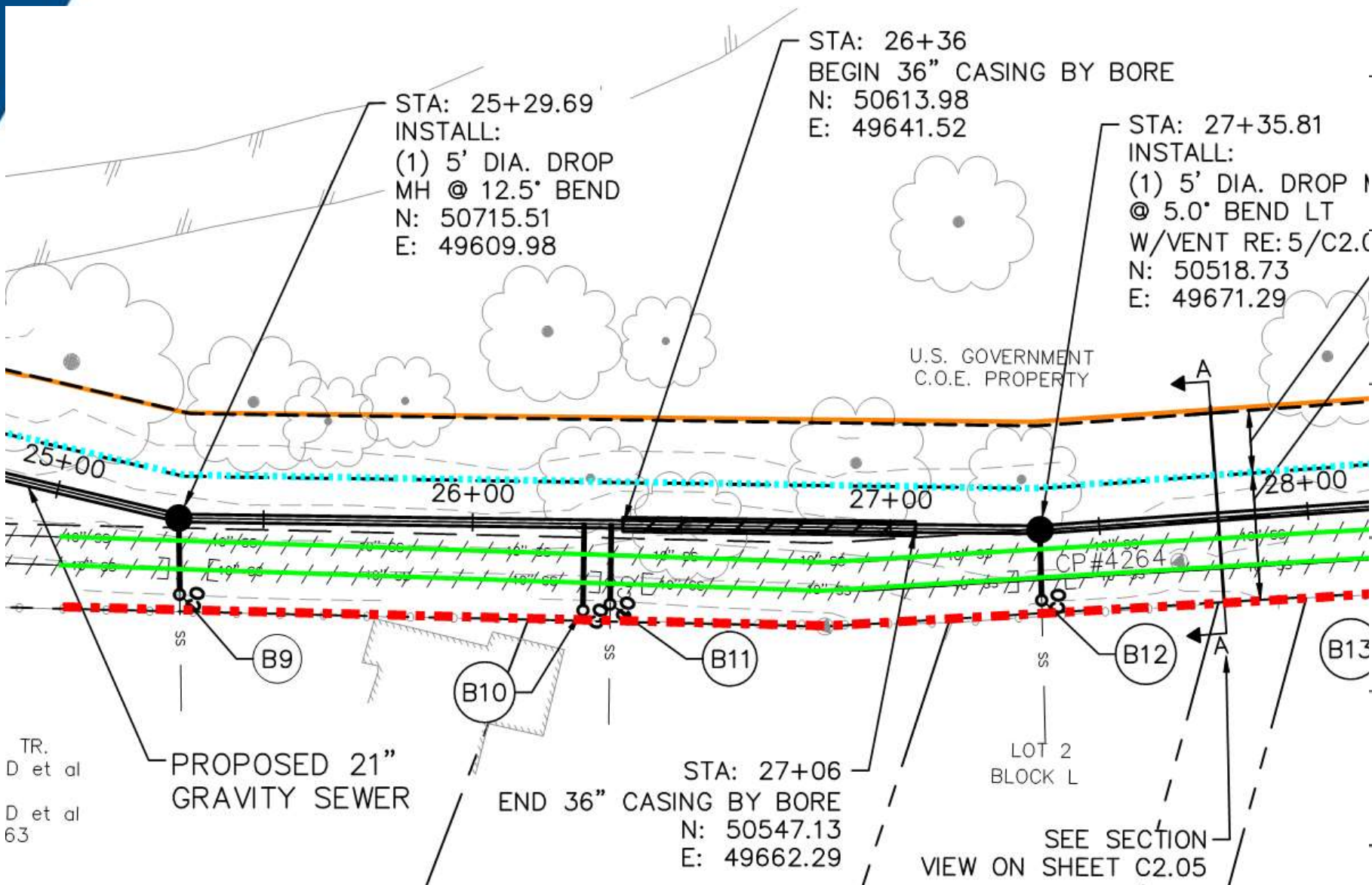


UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX





UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX



UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX



UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX





UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX



UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX



UCT The Underground Utilities Event



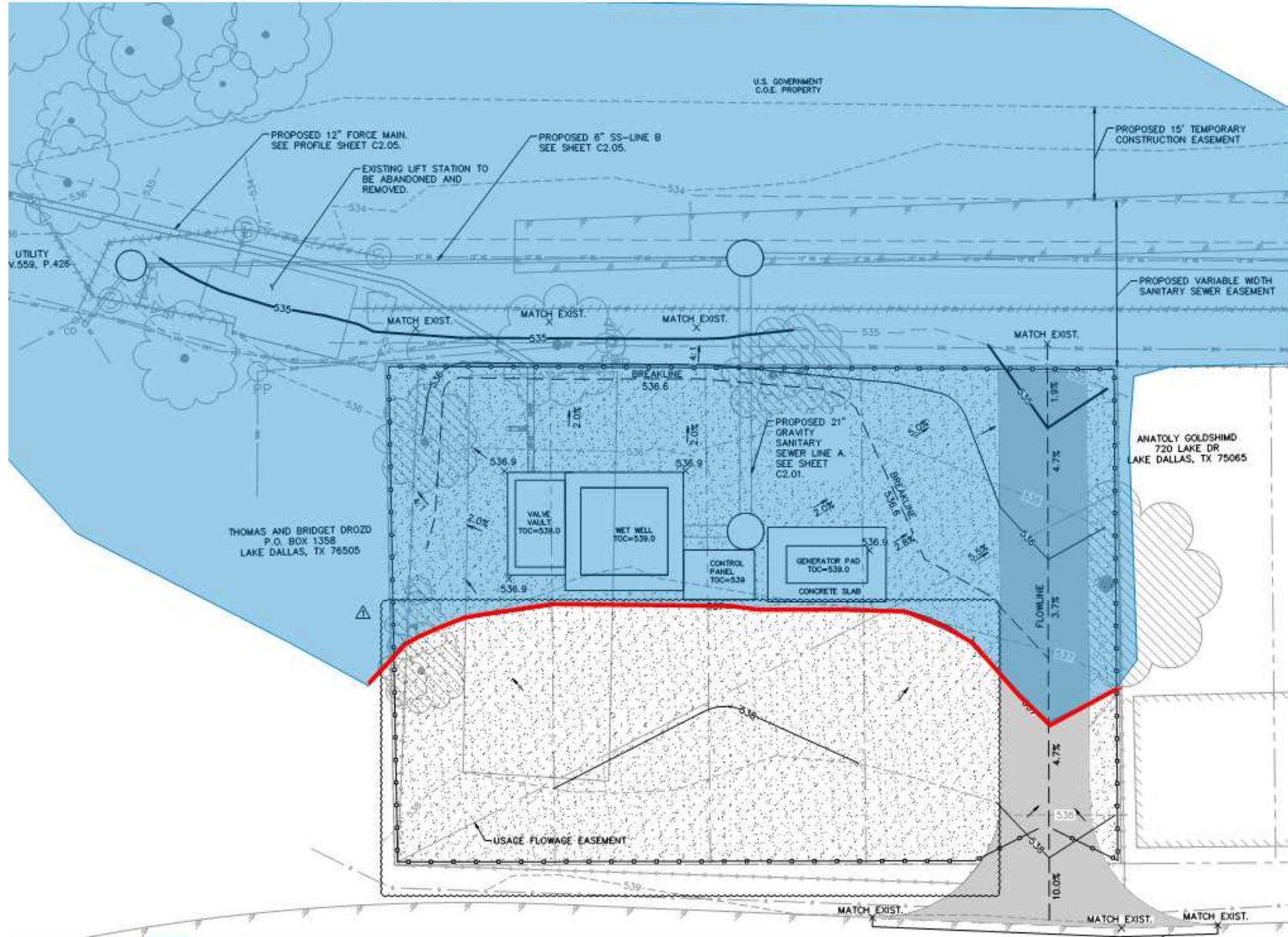
Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX

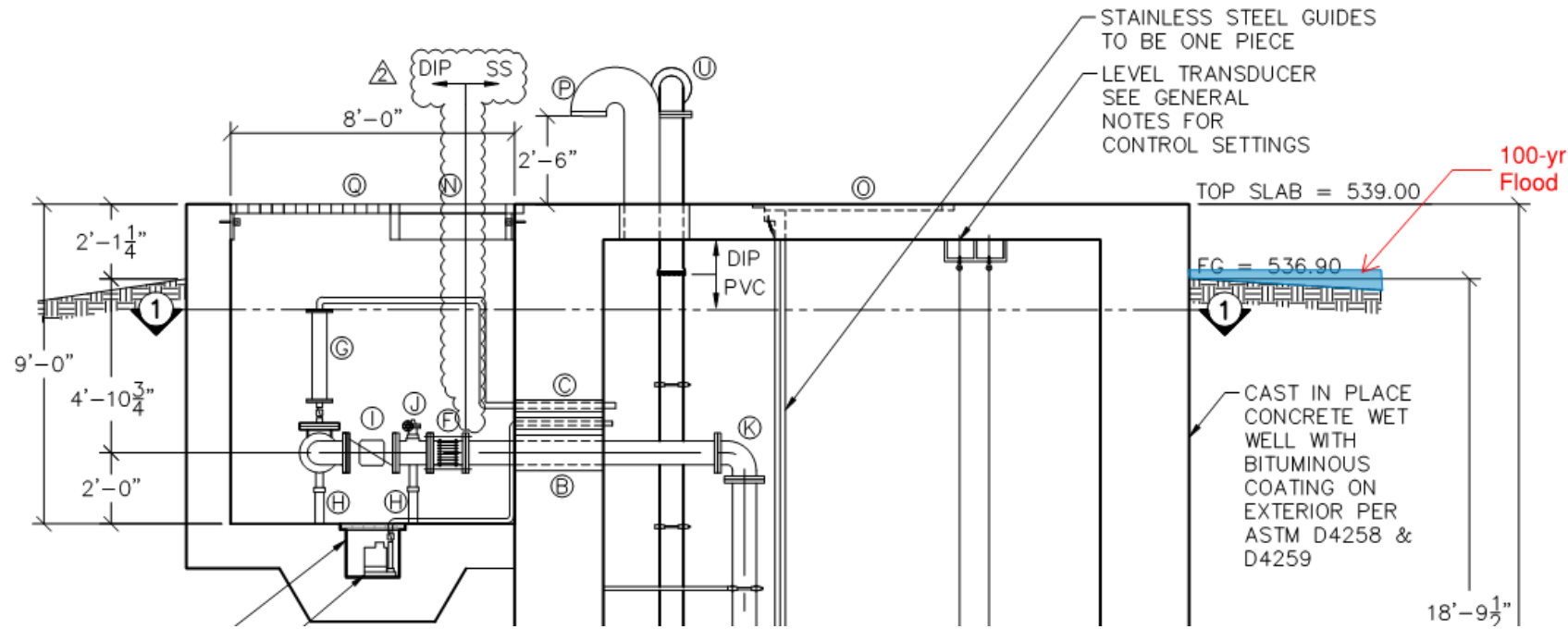


UCT The Underground Utilities Event

25 YEARS

Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX





USACE Flood Mitigation

	Quantity	Unit
Fill Above 100-year - 537' Elevation	0.0	CY
Cut due to Lift Station and Manhole Removals	60.6	CY
Fill below 100-year - 537' Elevation	48.5	CY
Additional Valley Storage Added	12.1	CY



UCT The Underground Utilities Event



Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX



Tree Planting Areas



Lessons Learned

- Permitting and Easements - Plan for the worst/hope for the best
- Always Verify Survey
- Track rain days and hold to the contract duration
- Take Ownership and document well
 - (YP to PM / EIT to PE)



Mike Fairfield,
General Manager
mfairfield@lcmua.org

Questions?

Kimley»»Horn

Chris Igo, P.E.
Project Manager
chris.igo@kimley-horn.com