



**PLUMMER**

# LARGE DIAMETER WATER MAIN IN URBANIZED CORRIDOR

Tom Snyder, PE, *UTRWD Director of Engineering*

Andre Garces, PE, *Plummer Conveyance Team Leader*

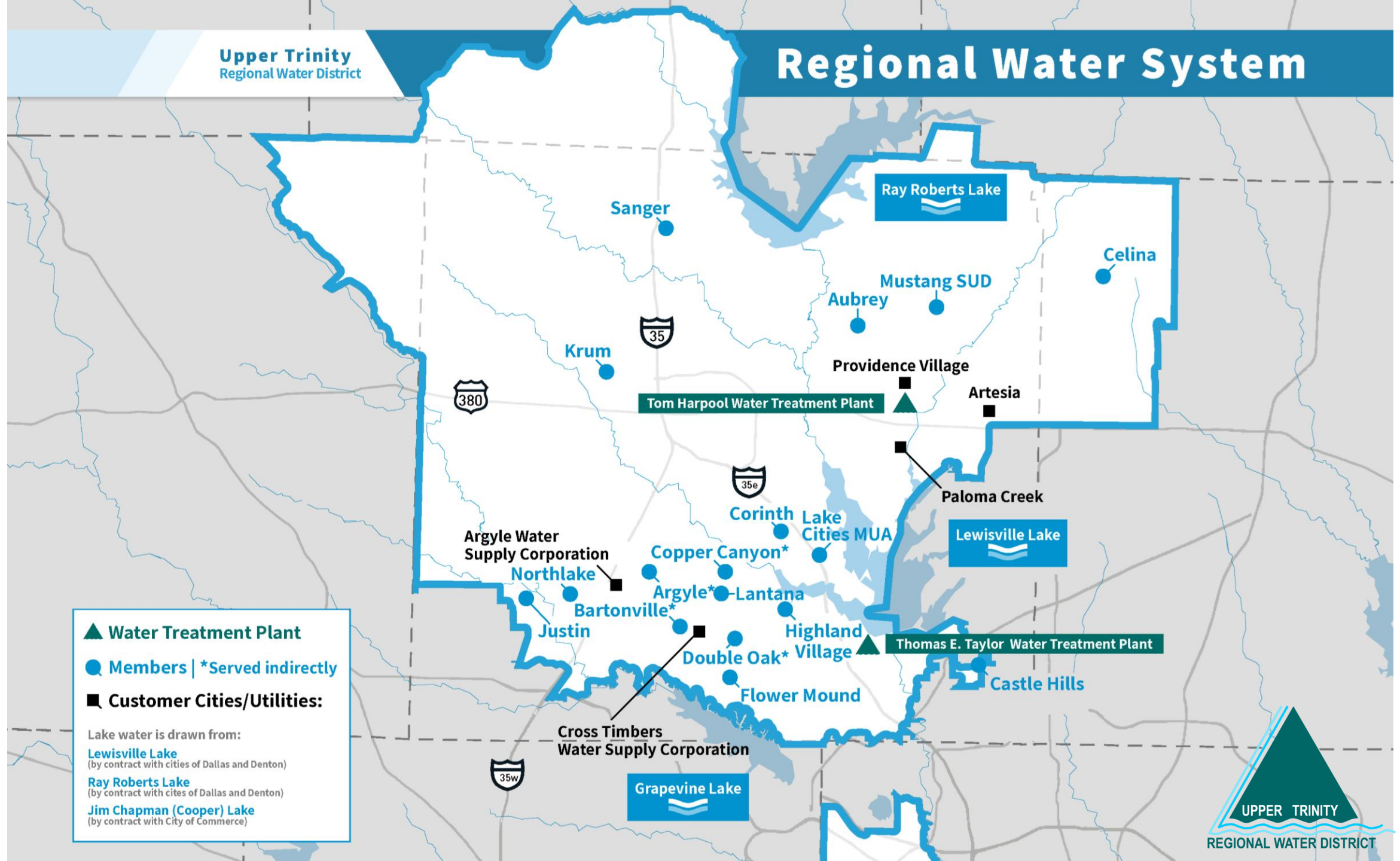


# UTRWD BACKGROUND



- UTRWD was created in 1989
- Located in Denton County Texas
- Wholesale Water and Wastewater service provider
- Serves 30+ member cities and wholesale customers
  - Approximately 325,000 customers
- 95 MGD Treatment Capacity
  - 65 MGD Historical Max Day Demand
- Approximately 107 Miles of pipe
- 2 Treatment plants
- 3 Pump Stations

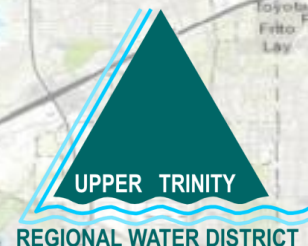
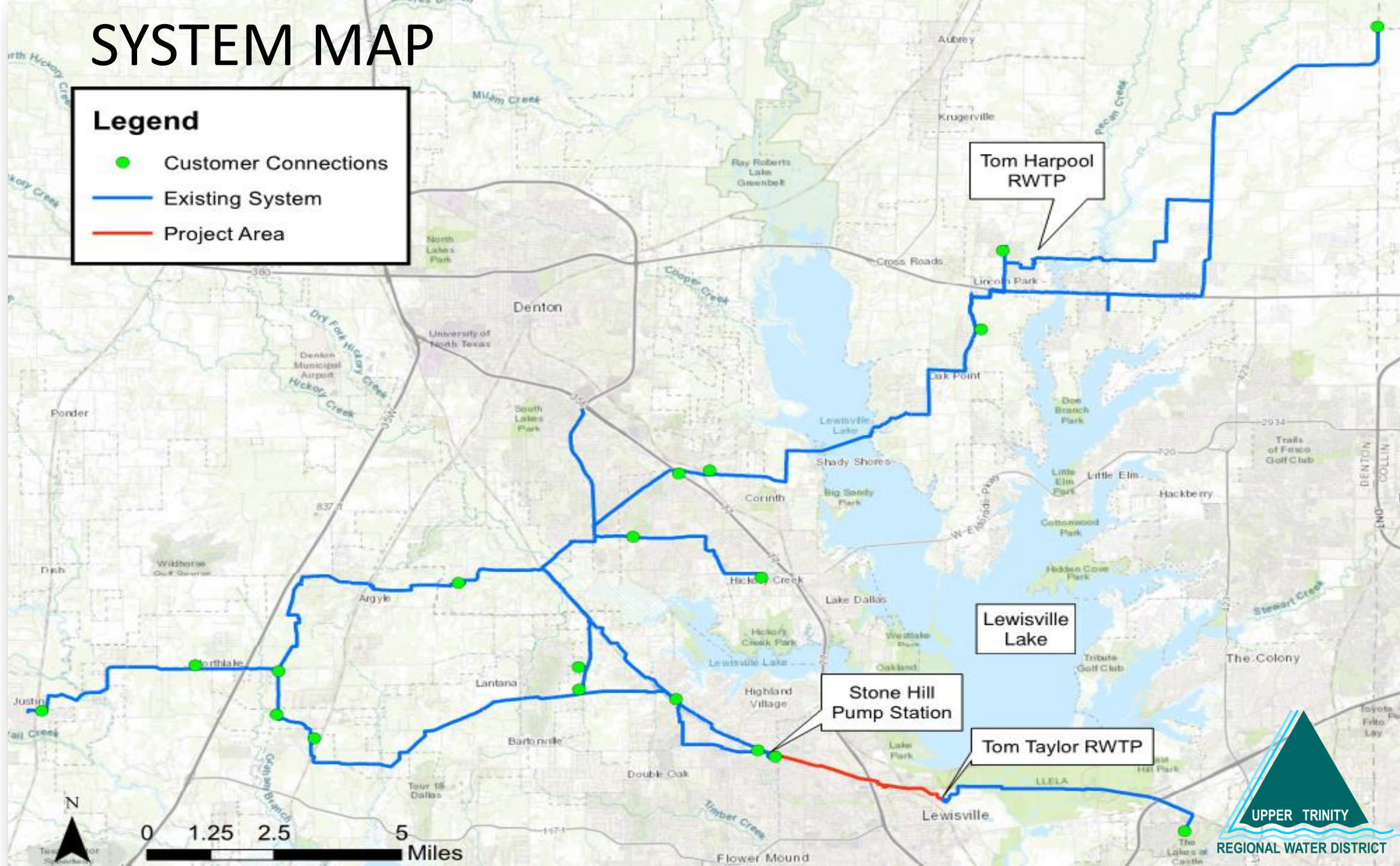




# SYSTEM MAP

## Legend

- Customer Connections
- Existing System
- Project Area



# PROJECT TEAM



- Owner: UTRWD



- Engineer: Plummer Associates



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- CMAR: Archer Western



- Funding Entities: UTRWD & Texas Water Development Board (TWDB)



**Texas Water**  
**Development Board**

# PROJECT BACKGROUND



- Original 48-inch Pipeline constructed in 1997 from Taylor WTP to Stone Hill Pump Station & adjacent to KCS railroad
- Pipe: 72-inch AWWA C200 Steel pipeline
- Length:
  - Original scope - 18,260 LF
  - Additional scope - 1,300 LF “yard piping”

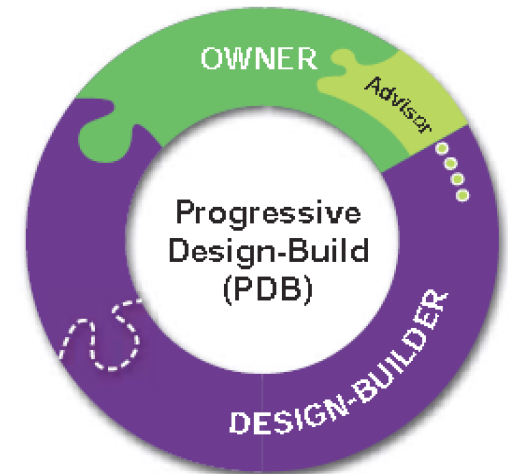
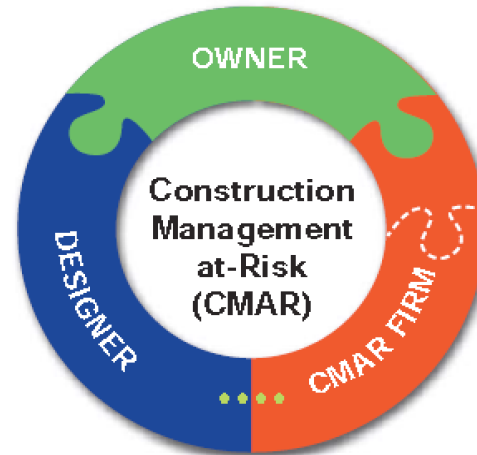
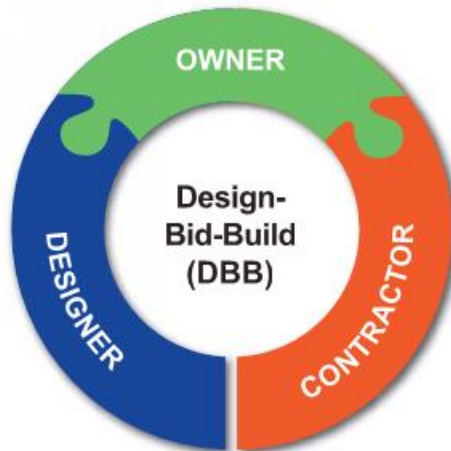
Design and construction parallel to 48-inch and within existing 30-ft permanent easement



# SCHEDULE



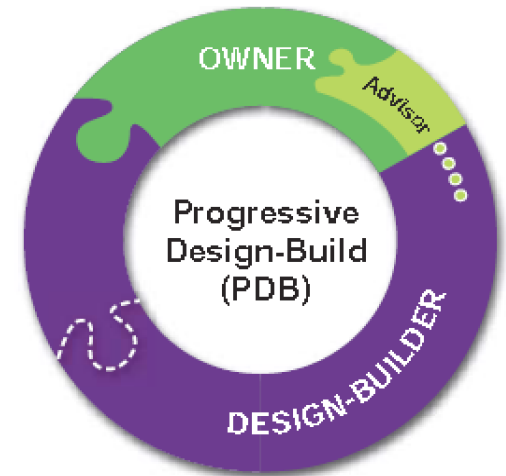
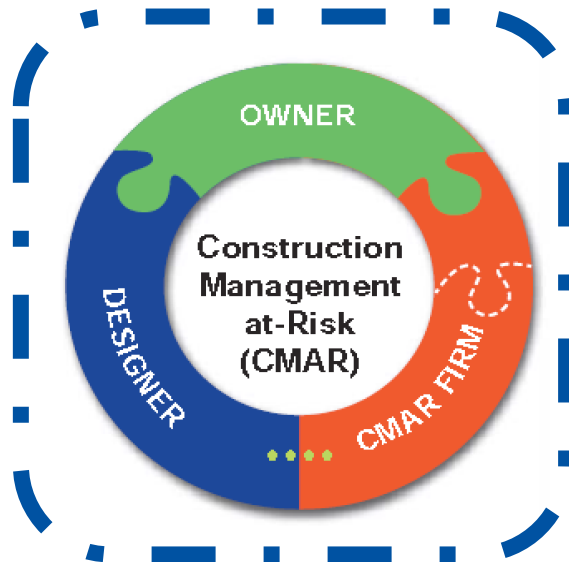
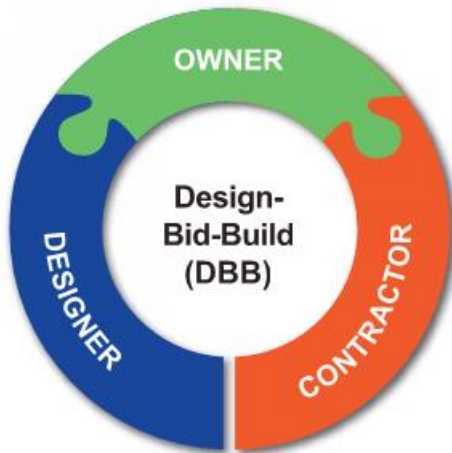
- Expedited to meet population growth and increased water demand approaching the existing system's capacity and obligations by summer of 2021.
  - Evaluated procurement methods to meet this schedule



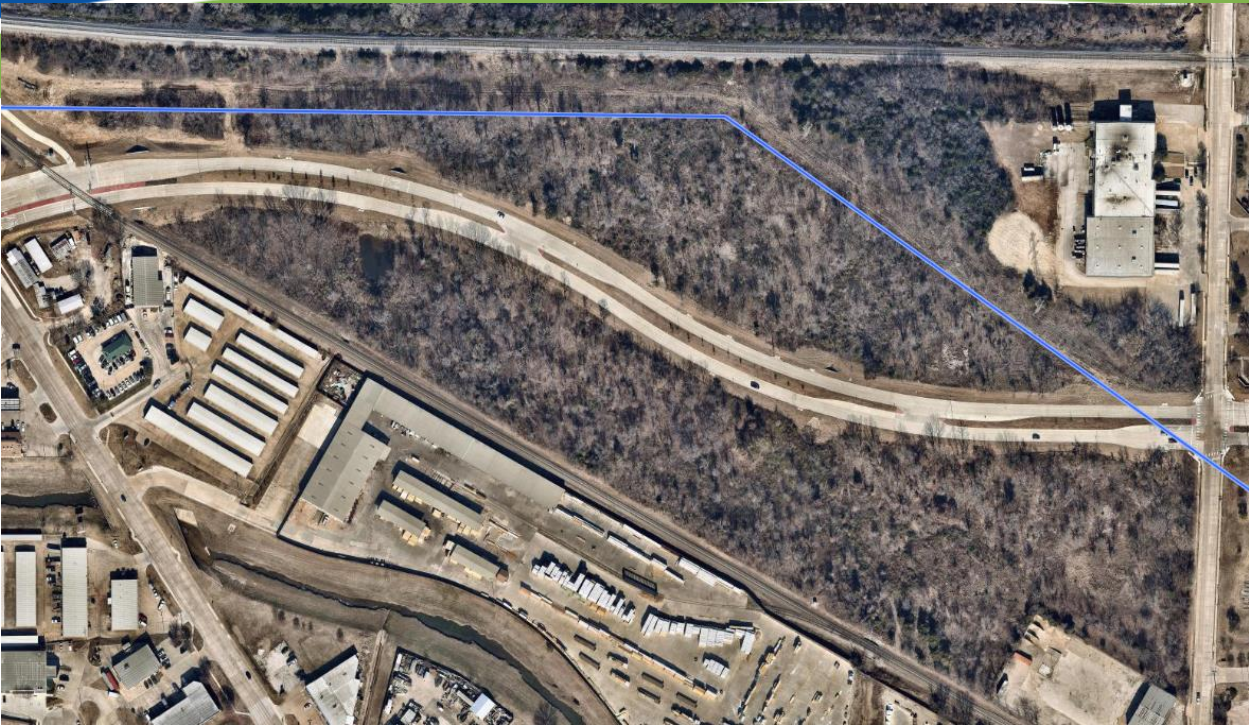
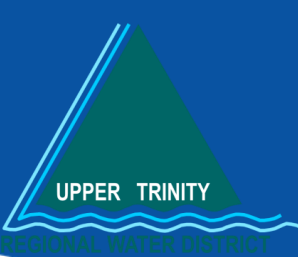
# SCHEDULE



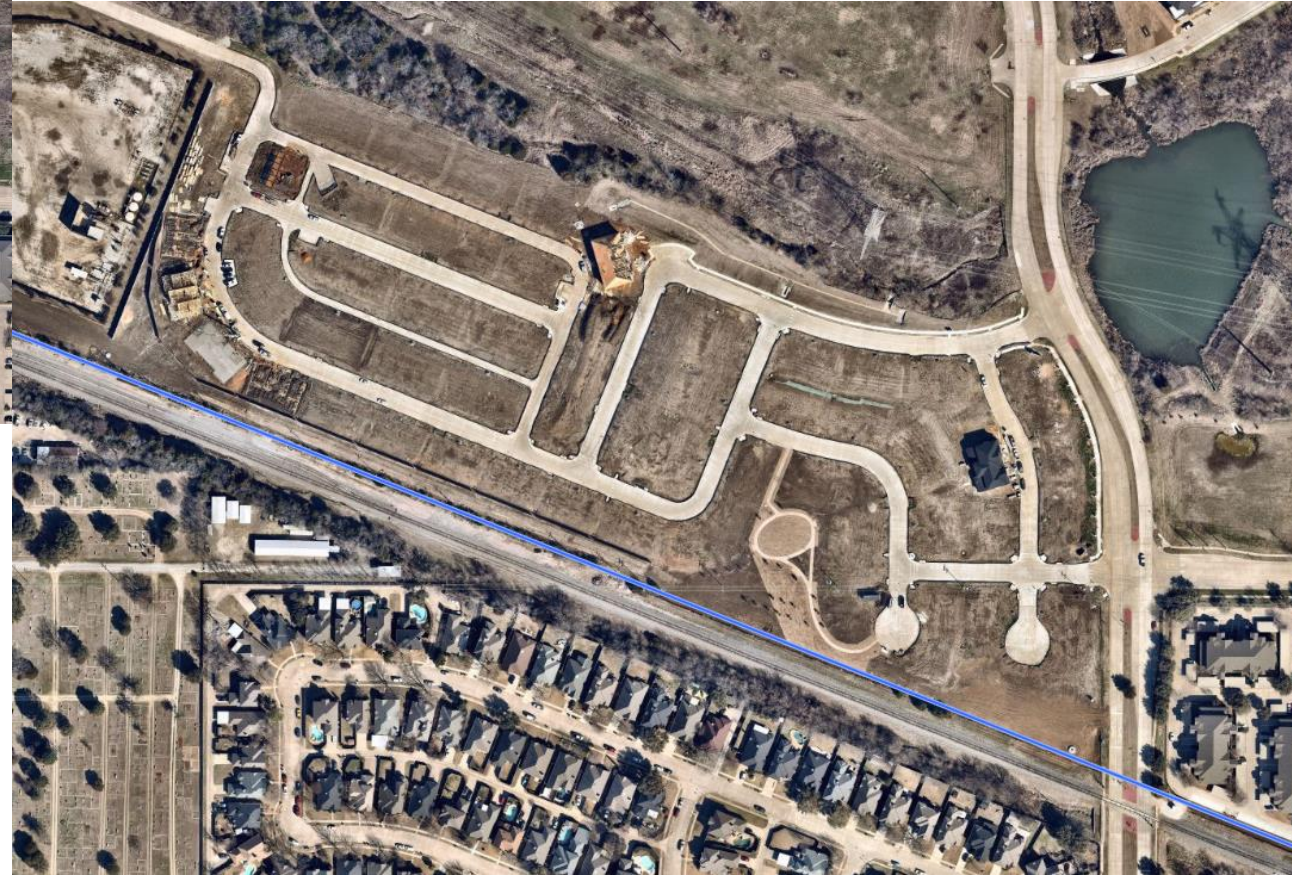
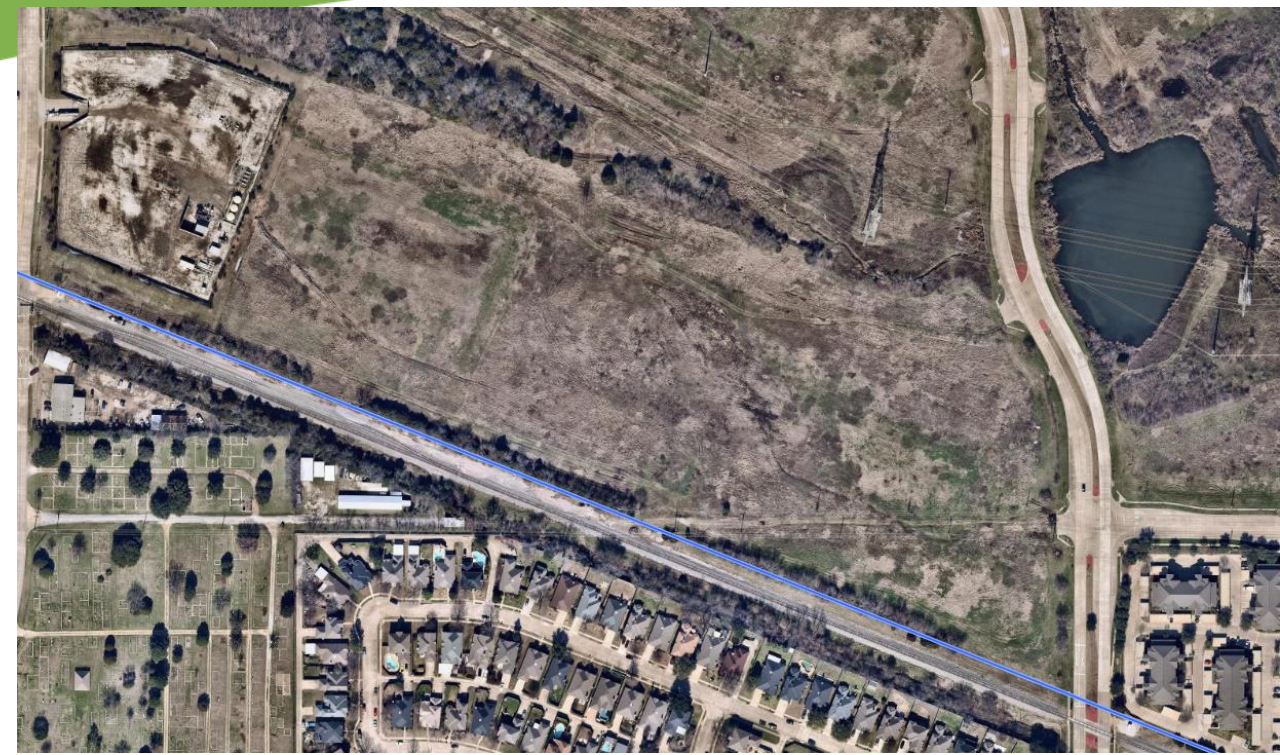
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# RAPID DEVELOPMENT



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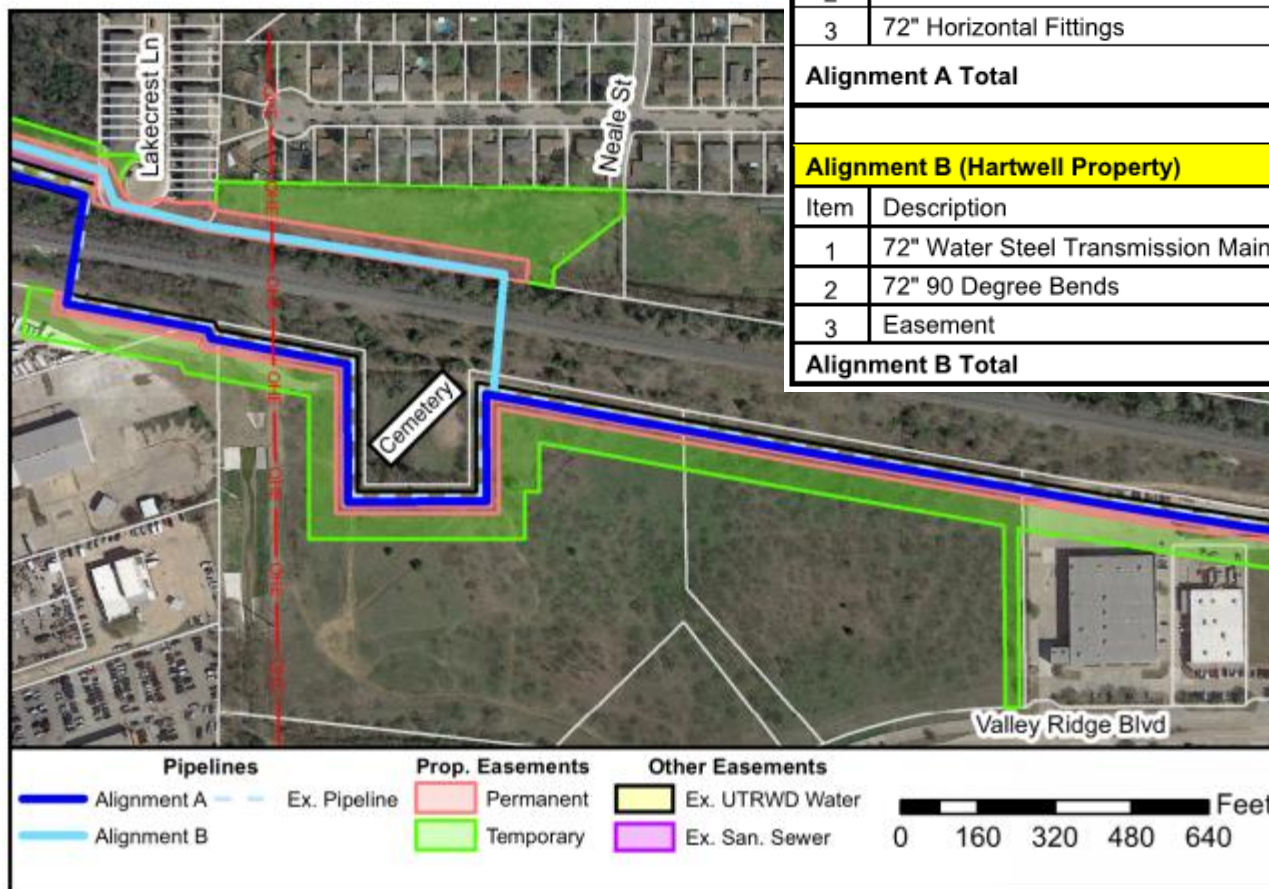


# ALIGNMENT CONSIDERATIONS



- Evaluated based on the following variables

- Constructability/Cost Differential
- Ease of Operation/Access
- Environmental Impacts
- Public/Business Impacts
- Utility Conflicts
- Permitting Issues
- Regulatory Issues
- Easement Assessment

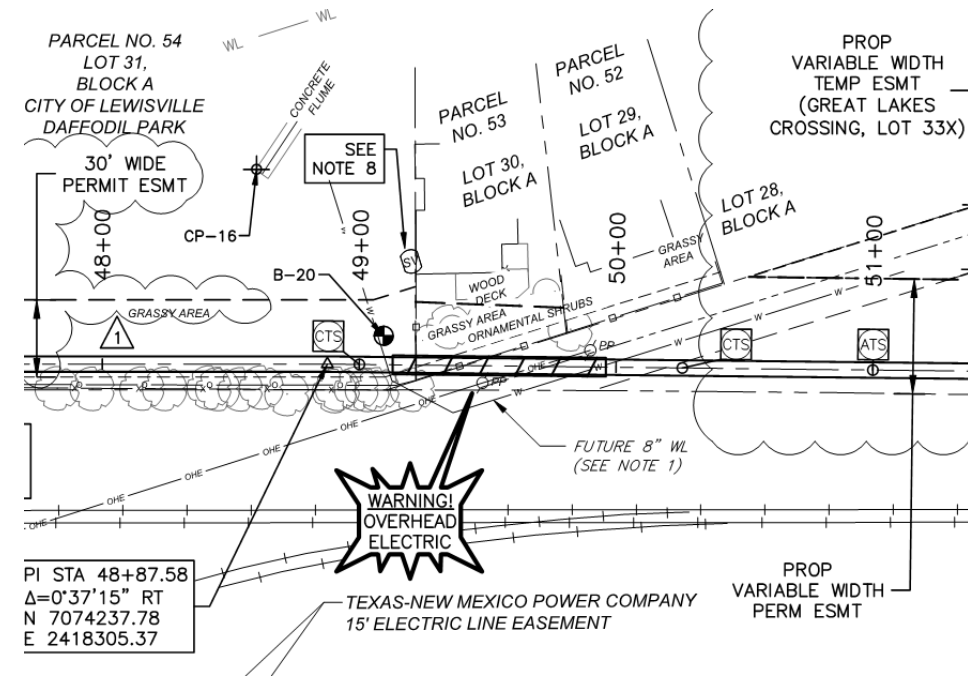


Segment 5: Cemetery					
Alignment A (Parallel Around the Cemetery)					
Item	Description	Qty	Unit	Unit Cost	Cost
1	72" Water Steel Transmission Main	1,600	LF	\$660	\$1,056,000
2	Easement	24,000	SF	\$7.50	\$180,000
3	72" Horizontal Fittings	6	EA	\$60,000	\$360,000
Alignment A Total					\$1,596,000
Alignment B (Hartwell Property)					
Item	Description	Qty	Unit	Unit Cost	Cost
1	72" Water Steel Transmission Main	1,125	LF	\$660	\$742,500
2	72" 90 Degree Bends	2	EA	\$60,000	\$120,000
3	Easement	33,750	SF	\$5	\$168,750
Alignment B Total					\$1,031,250

# DAFFODIL PARK



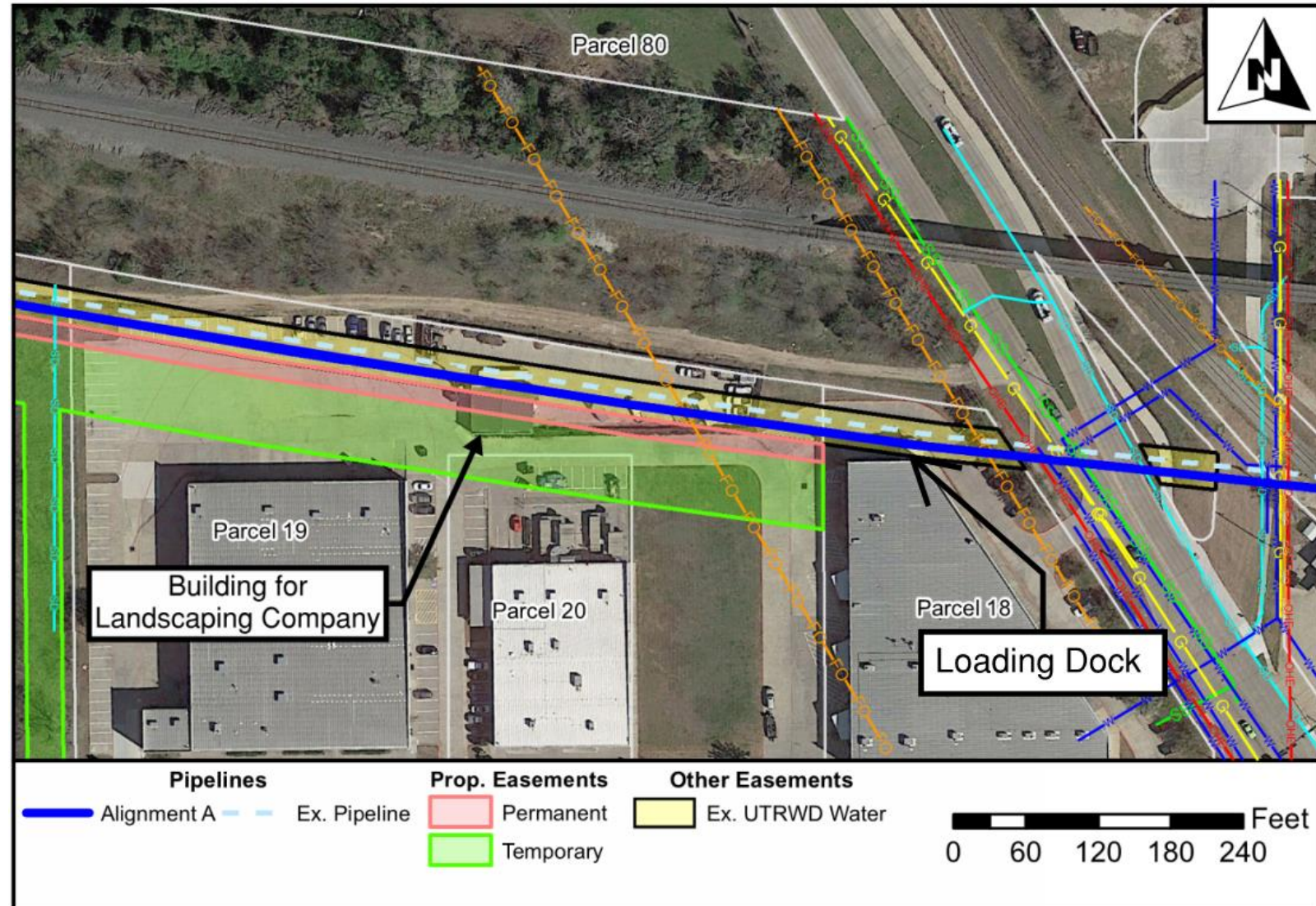
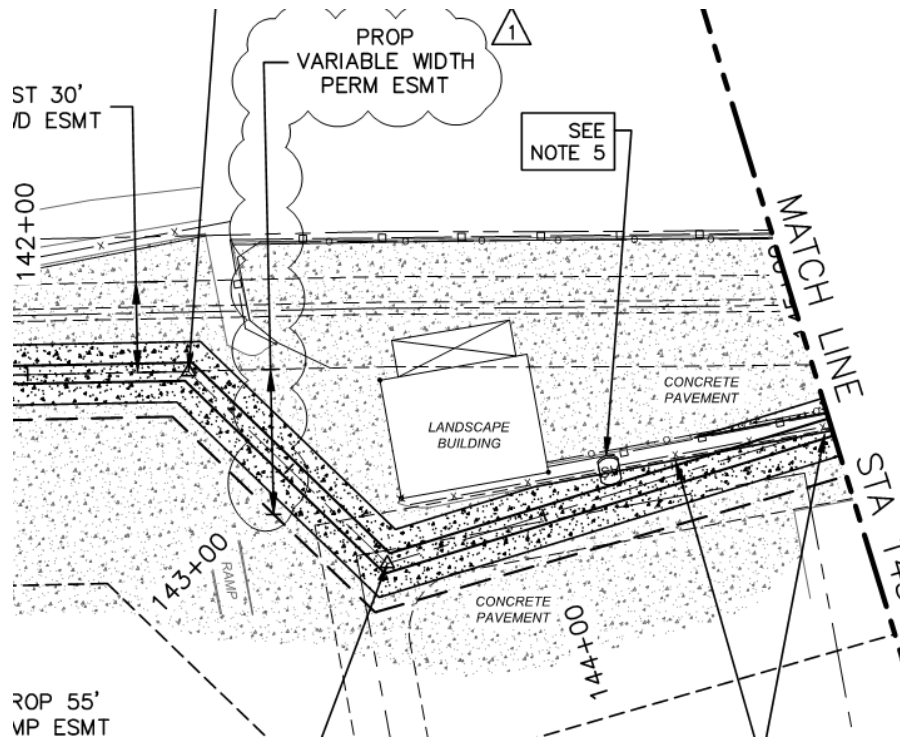
- Coordination with City of Lewisville Parks Department
- Bore pit in park
- Air release valve in park
- Boring backyard



# DENKMANN PROPERTIES



- Landscaping building built on easement
- Loading dock built on easement



# SUMMIT RIDGE APARTMENT COMPLEX



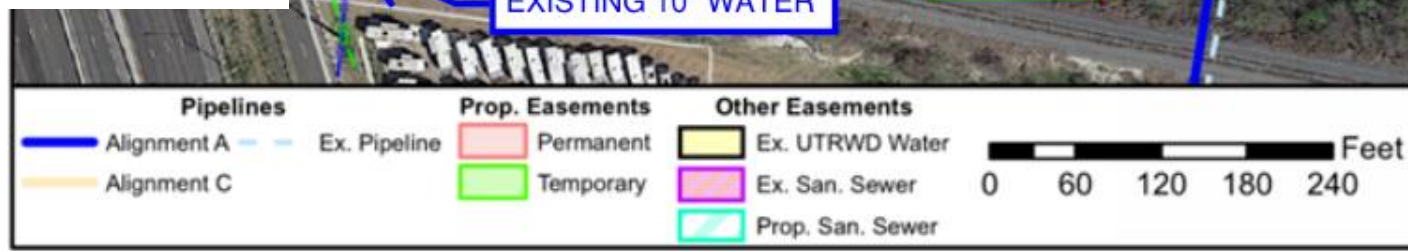
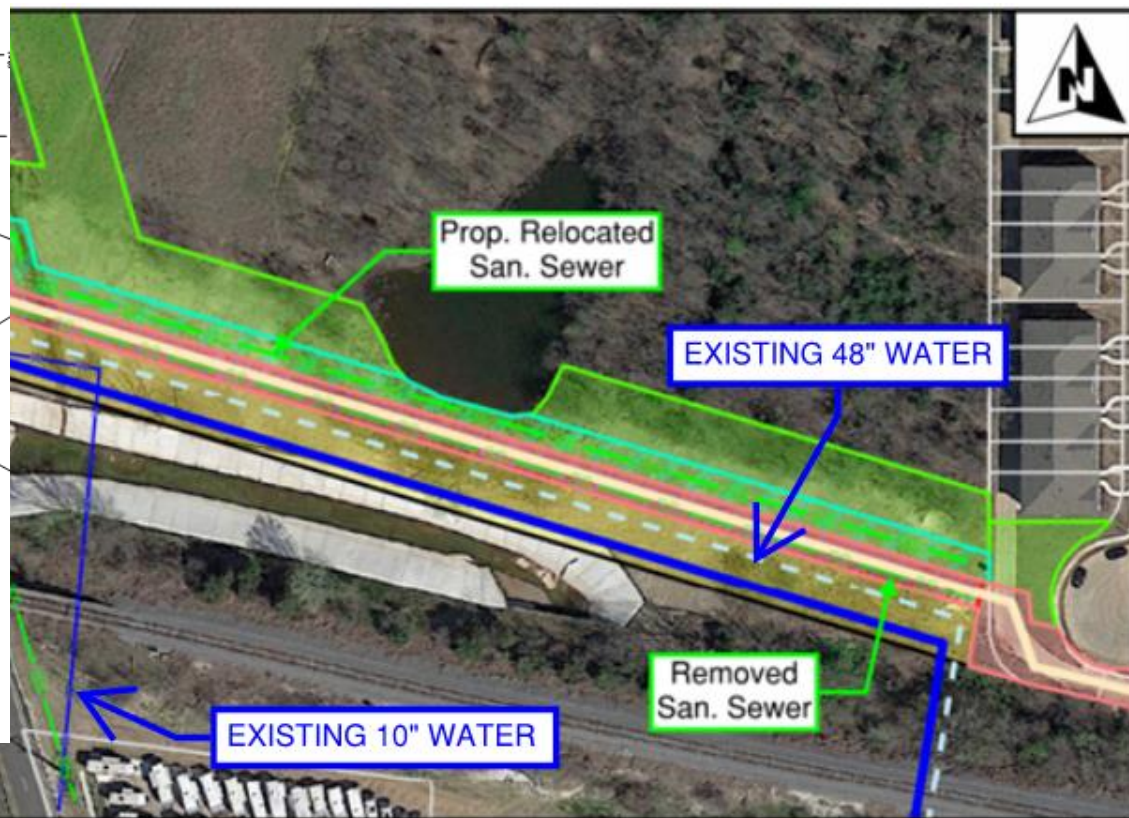
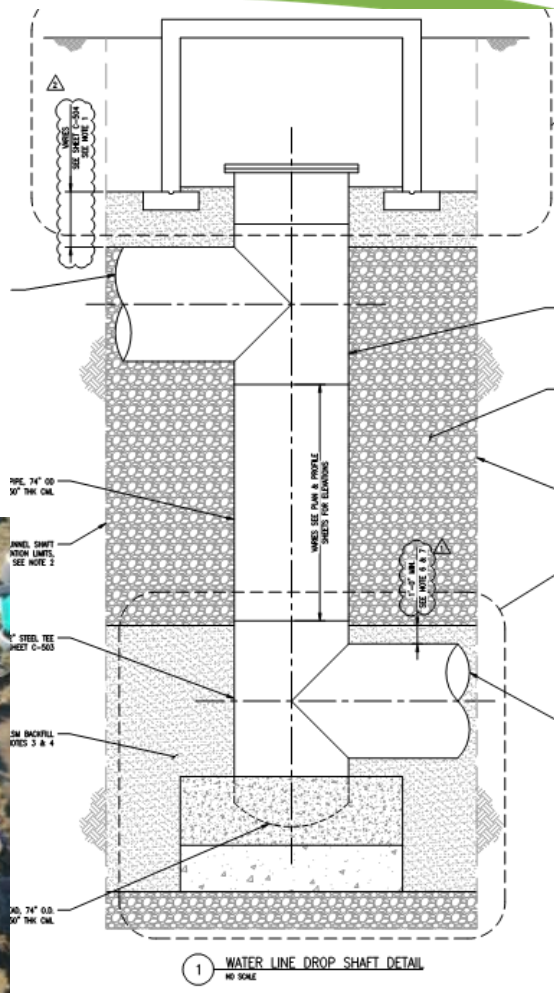
- Car wash/dog park conflict
- Coordination with complex



# I-35 DRAINAGE CHANNEL



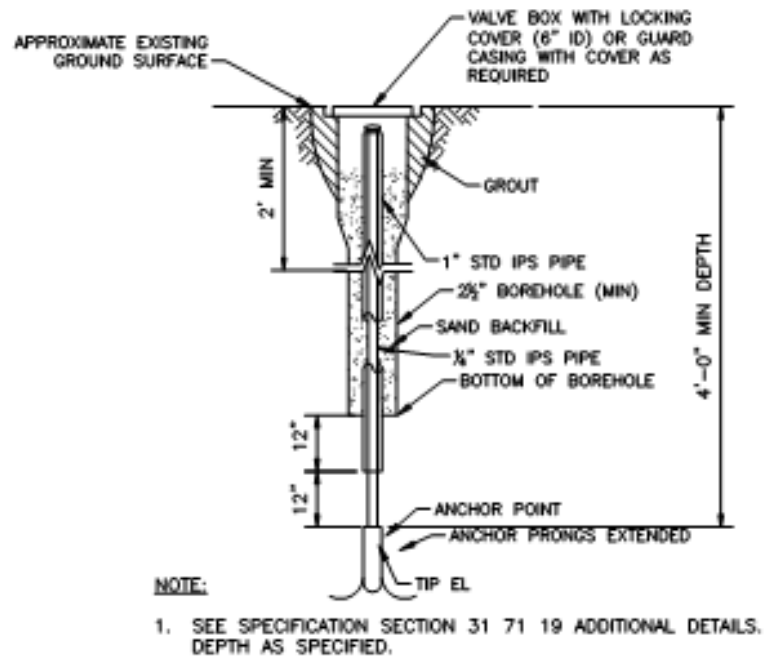
- I-35 Shaft
- Tight corridor



# ADJACENT HOUSES



- Settlement monitoring



**SUBSURFACE SETTLEMENT  
MARKER INSTALLATION (SSM)**

SCALE: 1/2" = 1'-0"

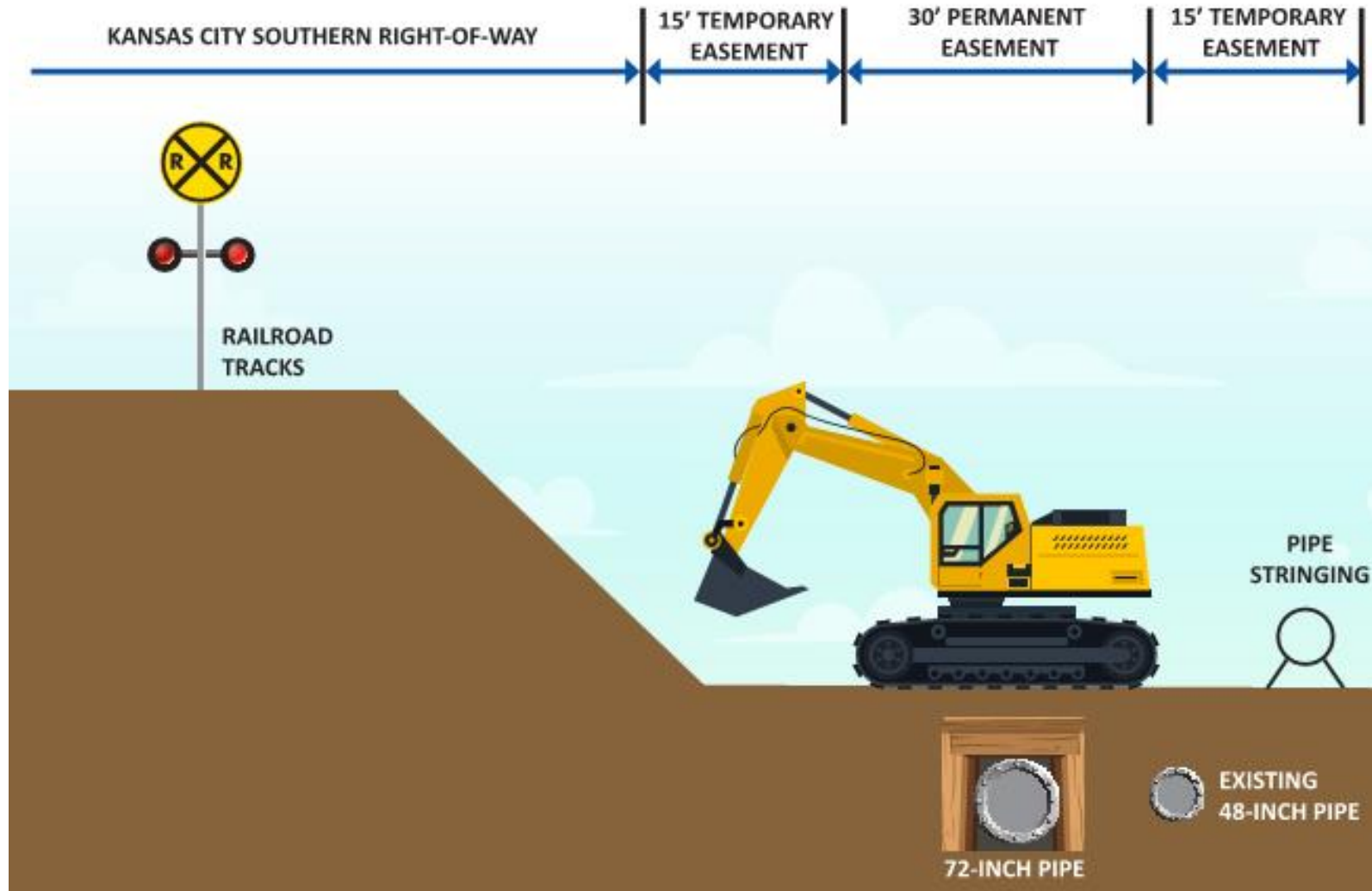
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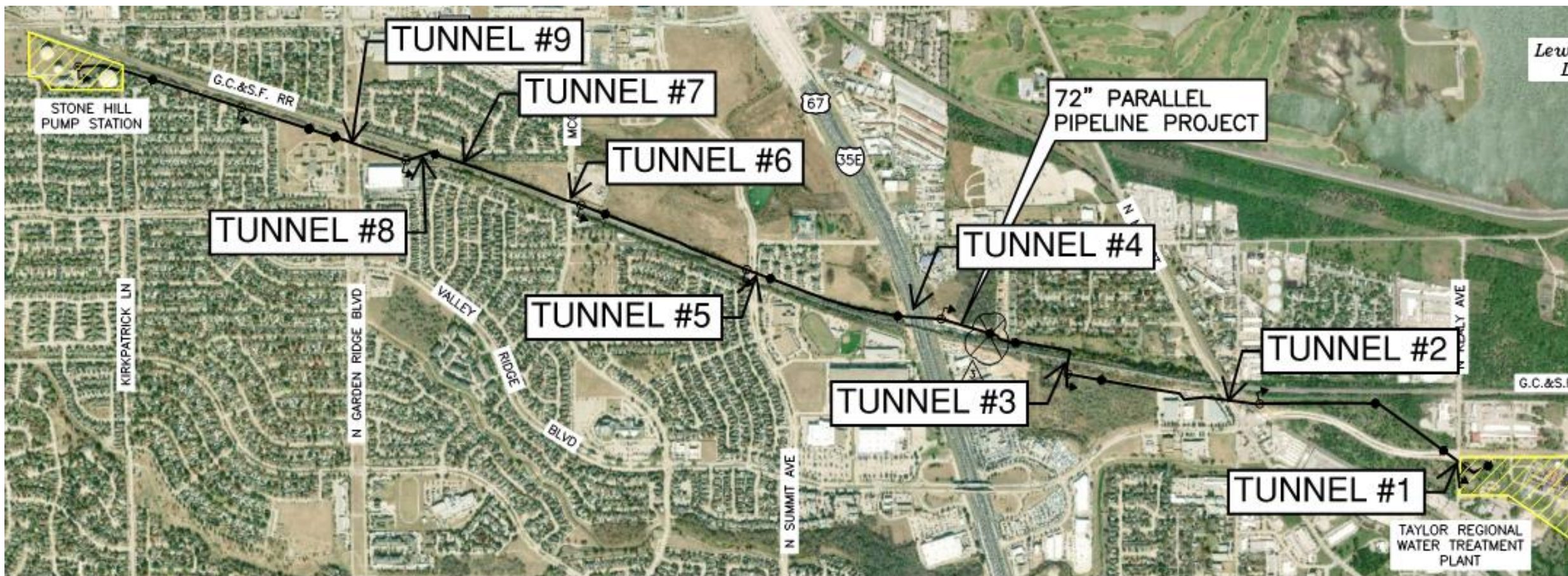
# KCS RAILROAD



- Flagging
- Permitting

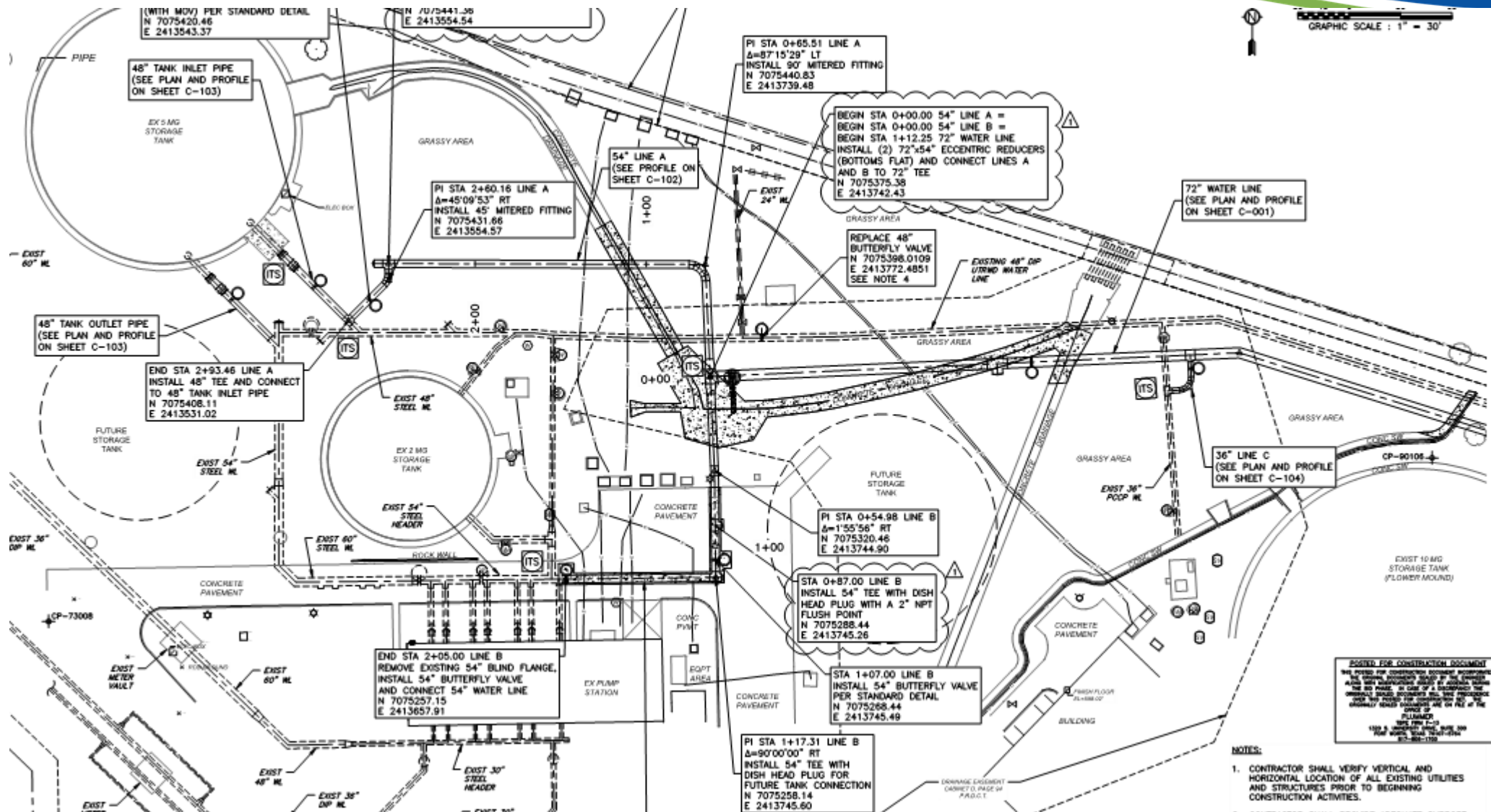


# TUNNELS

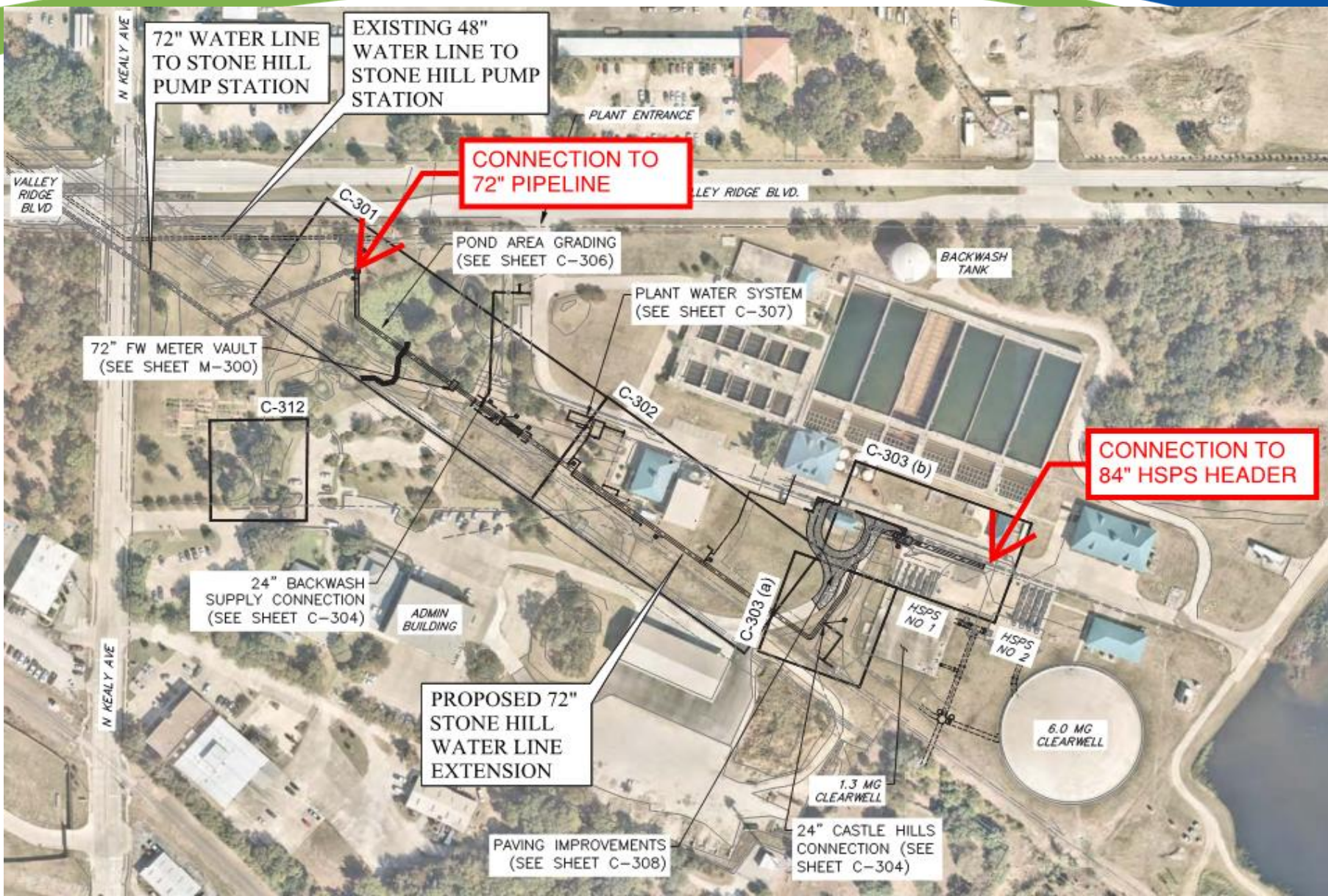




UPPER TRINITY  
REGIONAL WATER DISTRICT



# ADDITIONAL SCOPE



# PROJECT UPDATE



• Notice to Proceed	01/14/20
• Contract Duration	654 Days (564 Days)
• Substantial Completion	07/29/21 (04/30/21)
• Final Completion	10/29/21 (07/31/21)
• Days Elapsed to Date	472 Days / 72.17%
• Days Remaining	182 Days
• Contract Amount	\$39,570,696 (\$33,829,915)
• Total Earned to date	\$32,546,188.89 / 82.25%

# THANKS TO THE TEAM



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# QUESTIONS?

Tom Snyder, PE, UTRWD Director of Engineering

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