

# QUITMAN 78-INCH SANITARY SEWER EMERGENCY REPAIR



January 27 – 28, 2026

Henry B. Gonzalez Convention Center, San Antonio, Texas



# SPEAKERS



Tim McQueary, PE  
Vice President  
HB Trenchless



John Stiver, PE  
President, Principal Engineer  
Stiver Engineering

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# COLLAPSED SEWER / SURFACE SETTLEMENT

September 2022:  
City of Houston receives  
notice of surface settlement

Existing 78-inch sanitary sewer  
damage

Approximately 55-60 feet  
below ground surface



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# 2022 – CLOSED CIRCUIT TV (CCTV) Existing Line



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# PROJECT PROPOSAL OVERVIEW

Late September 2022

➤ City of Houston summoned several contractors to a pre-proposal meeting

❑ Contractors to provide Competitive Sealed Proposal (CSP)

❖ Cost

❖ Overall approach

❖ Safety

❖ Experience

❖ Schedule

❑ Proposal due date – **6 DAYS!**



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# CSP REQUIREMENTS

Technical Memo Signed/Sealed by Texas Professional Engineer Included:



- ✓ Document findings/recommendations
- ✓ Construction plan, evaluation process and selection
- ✓ Traffic control plan
- ✓ Bypass of sewers
- ✓ Utility coordination
- ✓ Surface drainage
- ✓ Repair/replacement pavement
- Proposal due date – **6 DAYS!**

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# DECISION MAKING MATRIX – REPAIR METHOD

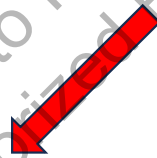
- Option 1 - Re-line
- Option 2 - Repair
- Option 3 - Replace by offset alignment



DESIGN

REVIEW

EDIT



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# HARPER BROTHERS CONSTRUCTION CSP SELECTED

October 10, 2022 – Harper Brother Construction given Notice to Proceed  
“NTP”



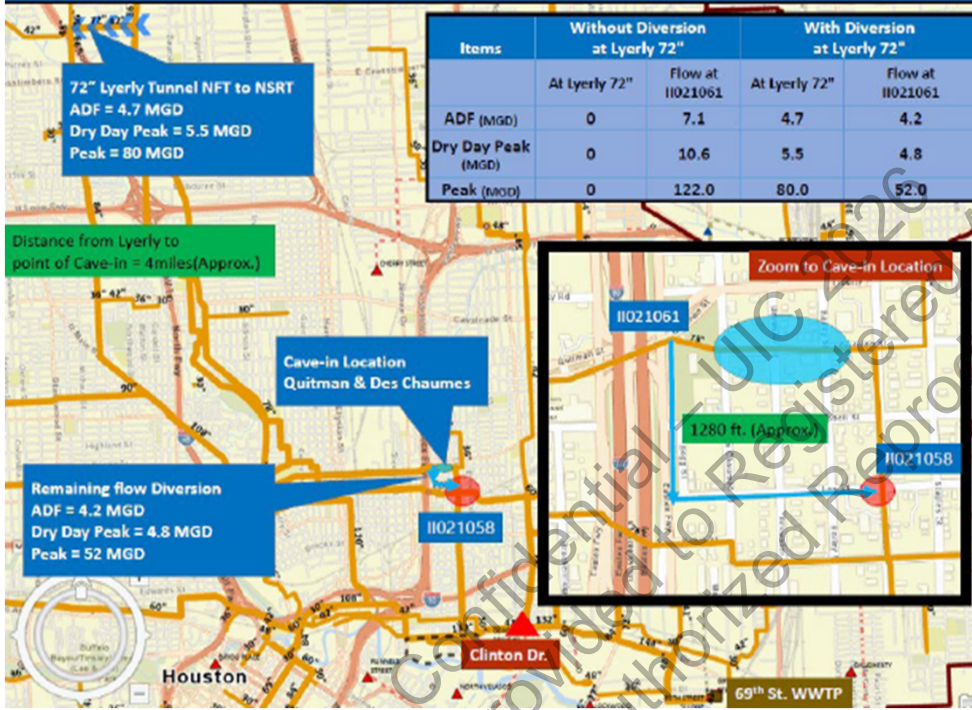
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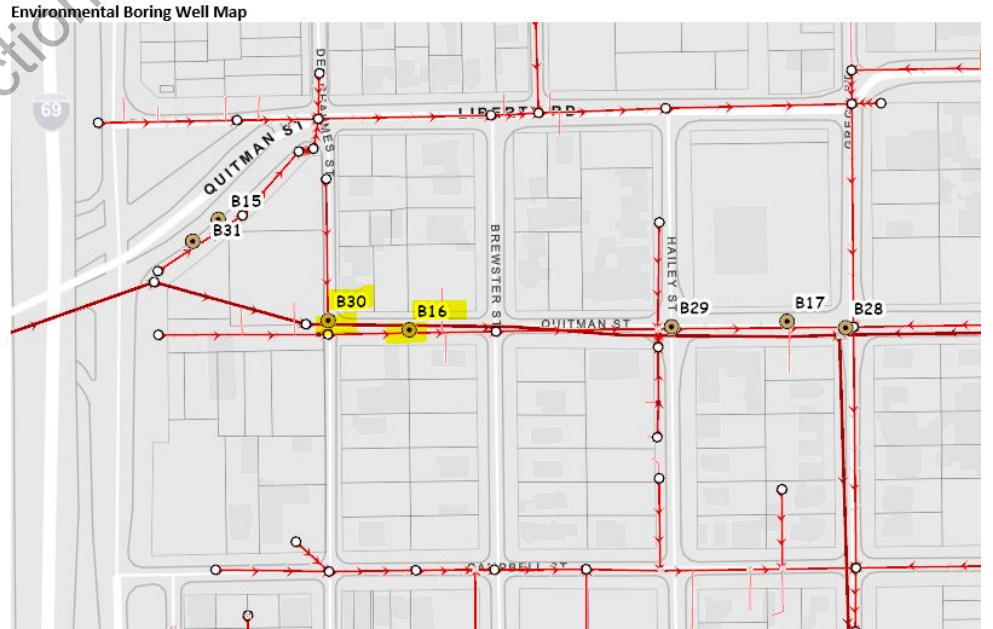


# PHASE 1: BYPASS DESIGN

Bypass Plan for 3103 Quitman St. Cave-in  
(Including Diversion of NFT to NSRT via Lyerly Tunnel)



- ❑ Survey and as built of existing utilities
- ❑ (4) Additional geotechnical borings



- ❑ Repair/Bypass Utilities Damaged by Sinkhole

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# PHASE 1: BYPASS DESIGN

System install Sunbelt Pump Solutions

- (6) 12-inch submersible pumps
- (2) 12-inch backup
- 24 Hour monitoring
- (4 EA) 24-inch HDPE lines 900-ft to downstream manhole
- 52 MGD Peak Flow



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# PHASE 1: BYPASS DESIGN

## Subsurface Conditions & Geotechnical Constraints

- ☐ Surface to Tunnel Depth:  
Firm to hard cohesive soils with localized layers of silt and silty sand
- ☐ Shaft: Saturated silt and sand zones
- ☐ Increased potential for ground loss and excavation instability.

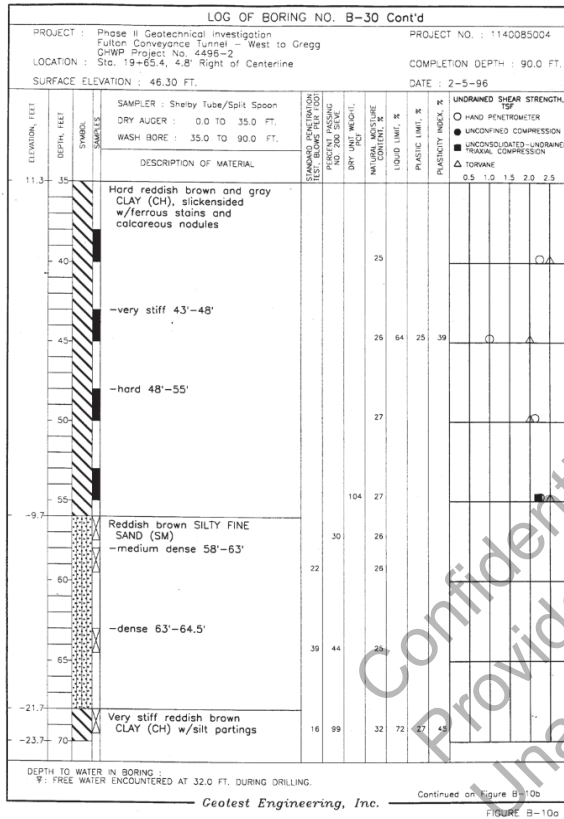
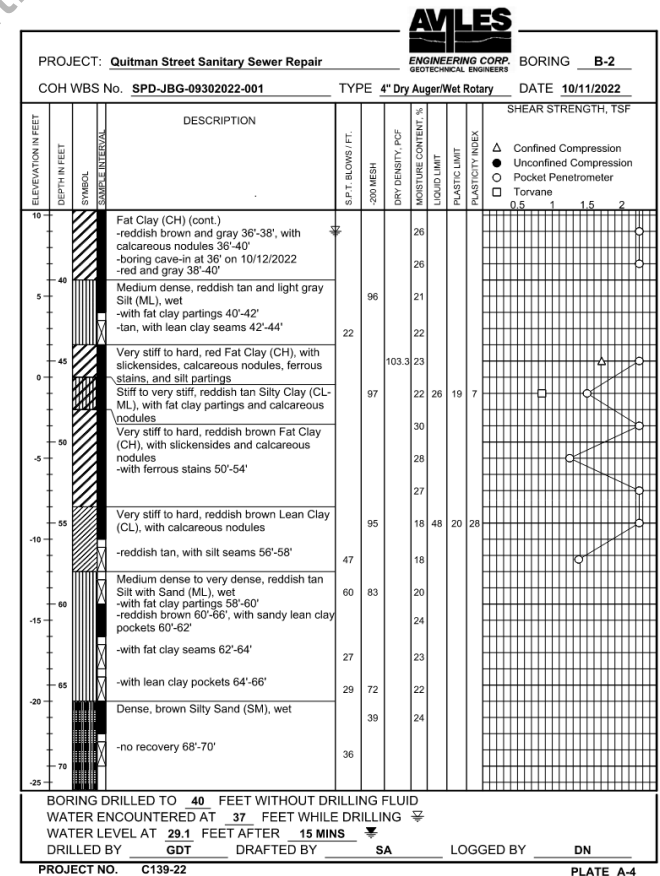


FIGURE B-10a  
PLATE C-6



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# PHASE 1: BYPASS DESIGN

## Intercept Shaft

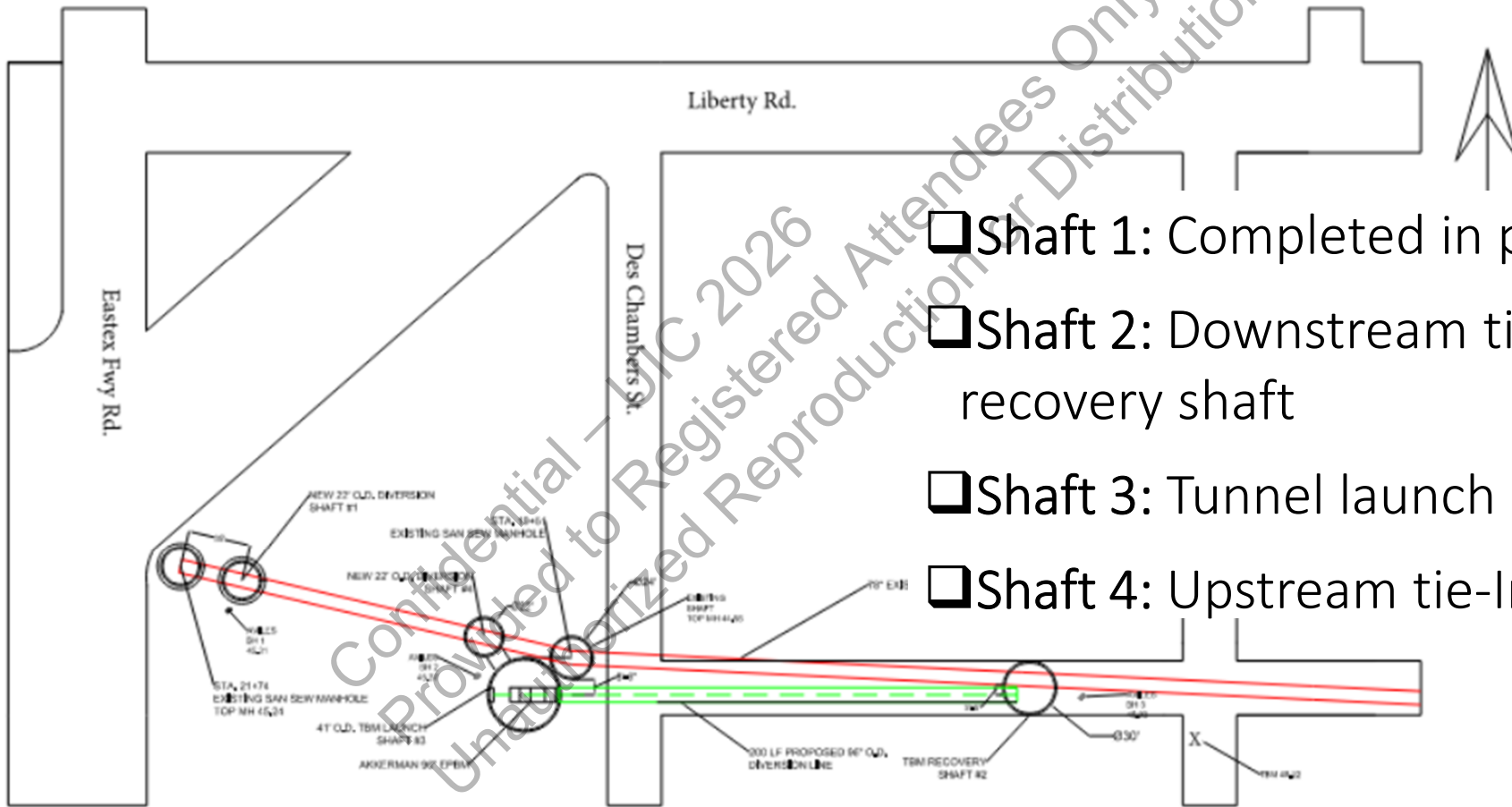


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# PHASE II: OFFSET ALIGNMENT CONSTRUCTION



- ❑ Shaft 1: Completed in phase I
- ❑ Shaft 2: Downstream tie-In and recovery shaft
- ❑ Shaft 3: Tunnel launch shaft
- ❑ Shaft 4: Upstream tie-In shaft

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# PHASE II: OFFSET ALIGNMENT CONSTRUCTION

- Concern for ground conditions
- Welded steel tunnel liner
- Earth pressure balance method

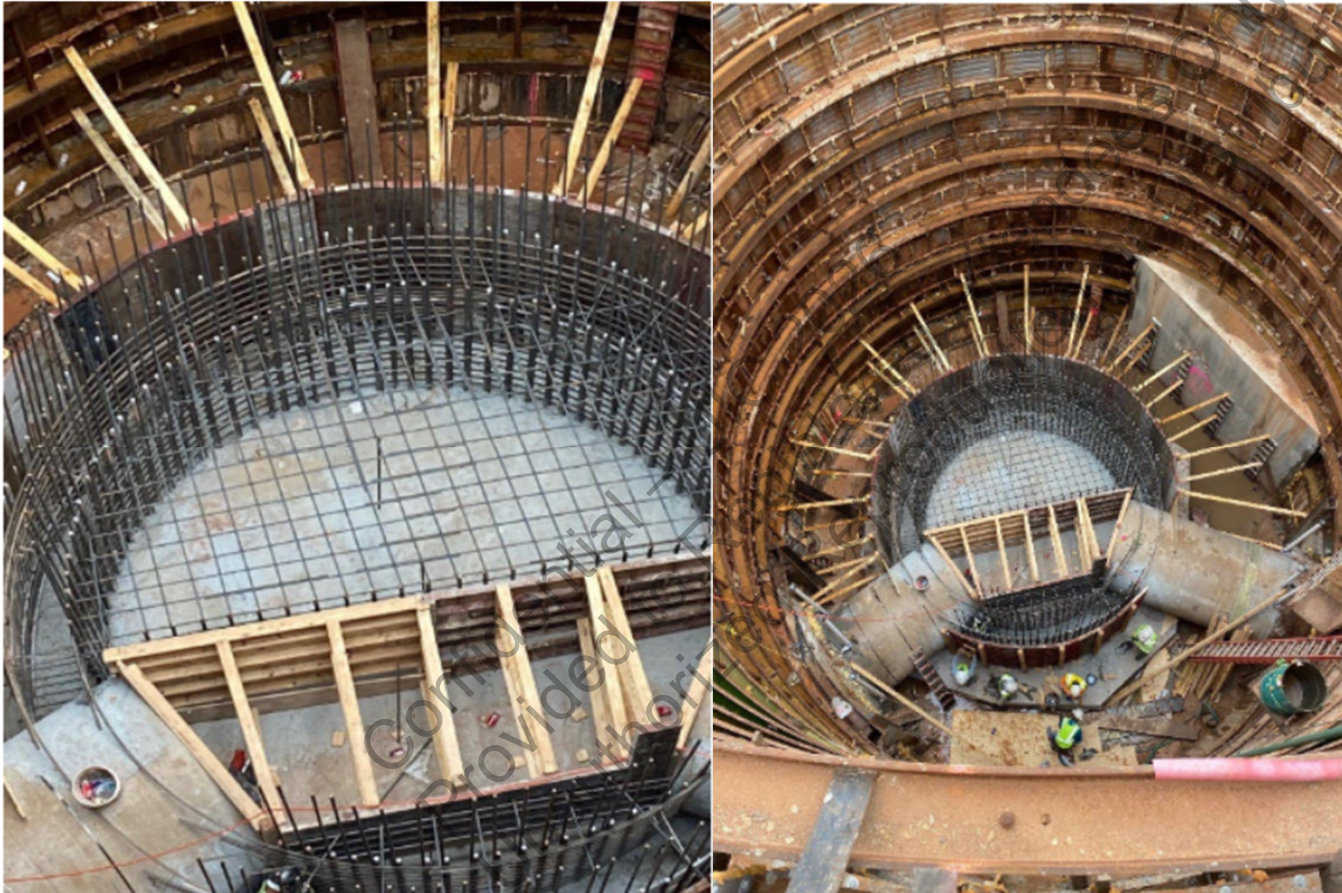


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# PHASE III: TIE-INS AND STRUCTURES



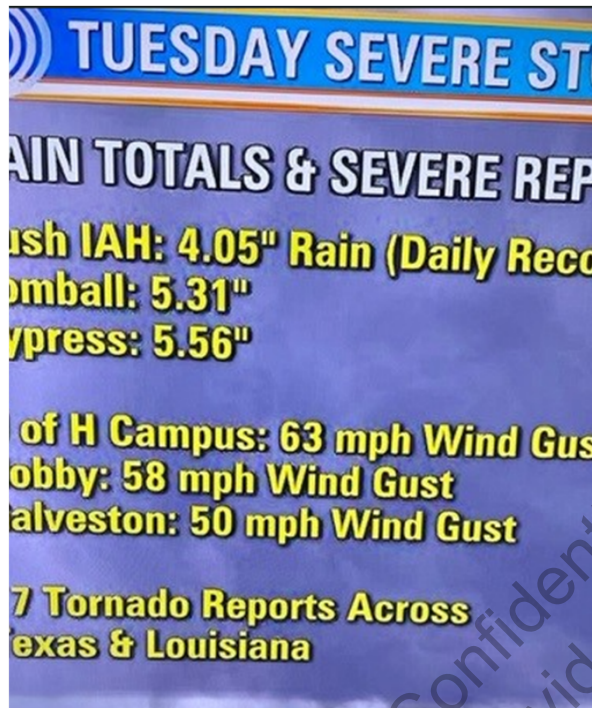
- Thread 78-Inch FRP and Grout
- Structure Construction
- Backfill and Restoration

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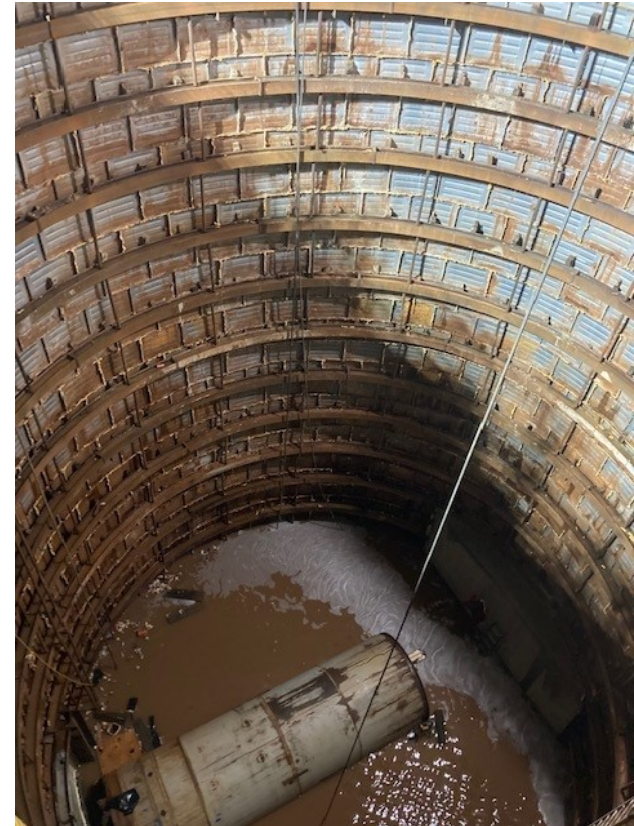
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# LESSONS LEARNED



- Abandon existing line
- Flooding/heavy rain
- Conservative repair limits
  - ❖ Avoid construction in repair area
  - ❖ Joint assessment existing pipe
- Geotechnical testing
  - ❖ Identify granular soils



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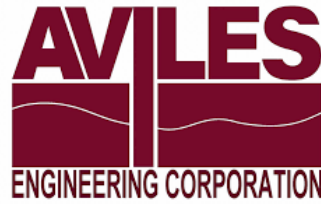
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# SPECIAL THANKS!!



GULF COAST  
GROUTING



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# QUESTIONS?



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