Interceptor Design in Alluvial Floodplain

Speakers:



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The Trinity River Authority of Texas

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UNDERGROUND CONSTRUCTION TECHNOLOGY

- Created by State of Texas in 1955
- 3 Core Functions
 - Treatment Services
 - Local Sponsor
 - River Basin Management



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Trinity River Basin



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Central Regional Wastewater System



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Bear Creek & West Fork Interceptors

- Upstream of CRWS treatment plant
- Large Diameter Pipe
 - Bear Creek (RCP)
 - West Fork (FRP)
- Critical location



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Pipe Failure

- March 2020
- West Fork Flooding
- Embankment Failure
 - Slope/soil instability
 - Trench erosion
 - Deflected pipe
- COVID-19



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Emergency Response

- Point Repair
- Full bypass pumping
- 5-week installation
- 114-inch FRP replacement
- Concrete encased









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Location of BCIR & WF-G Interceptors



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- The boring logs showed a highwater level and poor soil quality
- Most of the proposed pipeline's bury depth fell within a "Dark Brown Clay" stratum

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Geotechnical Borings Overview

LOG OF BORING NO.





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4. 120" PIPE SHALL USE 16' WIDE GEOGRID, 104" PIPE AND SMALLER MAY USE 13'

WIDE GEOGRID.

Design Trench Sections



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Structure Supports

• Because of the quality of the soil, supports are needed for manholes, wyes, and siphons





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Structure Supports



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Structure Supports



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