

LEVEES AND EMBANKMENTS



CLEARFORK MAIN STREET BRIDGE DESIGN AND LEVEE COORDINATION

CITY OF FORT WORTH

Freese and Nichols' bridge design included coordination with the USACE through the evolving 408 permitting process on both an existing levee and a future levee. The design team provided a 15-foot clearance over the existing levee, designed bridge columns outside the levee template and accounted for clearance over the future levee.

**FREESE AND NICHOLS IS NATIONALLY
RECOGNIZED** as the region's most experienced engineering consultant for levees, dams and earthwork, designing more than 150 major levees, embankments and dams during our history.

Our professionals provide all-encompassing consulting services for levee projects. We design levees and

embankments associated with a variety of project types, including pipelines, pump stations, treatment plants, roadways and bridges, drainage, and more. In addition, we provide technical representation to local and federal agencies, including the U.S. Army Corps of Engineers (USACE) and Federal Emergency Management Agency (FEMA). We are experienced in coordinating with agencies on existing and new levee projects.



LEEVE FEMA CERTIFICATION

CADDO LEEVE DISTRICT

Freese and Nichols performed FEMA certification and coordination activities for about 90 miles of levees within the Caddo Levee District in Louisiana.



A sampling of other projects includes:

- Performing FEMA certification for miles of levees in Arkansas, in addition to providing geotechnical analysis, inspection of stormwater pump stations and overall levee evaluation
- Reviewing levee improvement districts' policies and procedures for regulatory compliance, including record auditing and risk identification and management

SERVICES AND CAPABILITIES

- Inspection and Assessment
- Design
- Rehabilitation
- Geotechnical
 - Seepage
 - Settlement
 - Stability Analysis
- FEMA Levee Compliance Assessments
- Risk Analysis
- Siphon Design
- Closure Structures Analysis and Design
- Embankment Armoring Design
- Design Flood and Breach Analysis
- Emergency Action Plan and Operations Plan Development
- Interior Drainage System Analysis and Design
 - Pump Stations
 - Pipelines
 - Stormwater/Drainage
 - Pipeline Crossings and Penetrations
 - Overflow Structures
- Other
 - Environmental Permitting
 - CLOMR/LOMR Permitting
 - Hydrologic and Hydraulic
 - Structural Design and Assessment
 - Mechanical/Electrical/Plumbing
 - Funding



Freese and Nichols, Inc. is a professional consulting firm serving clients across the Southwest and Southeast United States. With sustainability in mind, Freese and Nichols plans, designs and manages infrastructure projects. It is the first engineering/architecture firm to receive the Malcolm Baldrige National Quality Award.

