

South Fork Joe Creek Improvements

City of Tulsa, OK
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► Scheduled for completion in Spring 2010

As part of the City of Tulsa's ongoing storm water initiatives, Meshek & Associates, PLC, was contracted to perform a hydraulic design study and assist in the design of bank stabilization for South Fork Joe Creek. The study established criteria for mitigating flooding and erosion issues along the creek.

Tulsa is in a relatively flat location and, as the city has grown into a metropolitan area, the increase in impermeable surfaces has caused the runoff into the creeks to increase dramatically. Flooding problems were complicated by deep vertical earthen walls, inadequate channel geometry and undersized drainage

structures. The channel was highly eroded in some locations threatening residential homes.

Improvements included a double 10'x6' box culvert, gabion walls and control outlets to minimize long term drainage and erosion issues. To stabilize the creek banks, the City opted for an interlocking retaining wall system. The specified 46,000 square-foot, retaining gravity walls were 13 to 14.5 feet tall (without reinforcement) and constructed on a concrete leveling pad.

Portions of the channel were also culverted creating a greenbelt for the residents in the area.



Middle:: Pre-project channel with noticeable bank erosion.

Top: Underground conveyance system enhanced community green-space.

Bottom: Esthetically pleasing new retaining walls for open channel conveyance.

Project Fee and Special Features

Construction Cost: \$5,000,000

Notable aspects of the design include the combination of needed erosion control, enhanced drainage structures and a greenbelt for the community.



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