



Engineering Project Case Study

Southwood Trace Lane Bridge

The Southwood Trace Lane bridge was an important project completed for Galena Park ISD over the Houston Coastal Water Authority West Canal. This project met with significant challenges following the 9/11 terrorist attacks because of the potential threat to the City of Houston's drinking water supply. The bridge has enabled Galena Park ISD school buses a much shorter route to the west end of the district saving a significant amount of time and money, while protecting the city's water supply from potential attack.



Galena Park ISD built the Cobb 6th grade campus and Freedom elementary school in the northernmost part of the school district to serve students who lived on both sides of the Houston CWA's west canal. The west canal had no bridges for several miles in either direction and required school buses and students to travel ten miles or more to get to a school that was a few blocks from their home. However, the potential for terrorist attack on the water supply for the City of Houston was significant. Despite the support of the school district, fire department and the Harris County Precinct 4 Commissioner, the project was rejected approval by the City of Houston and very nearly was canceled.

With the Atkinson Engineers' "no ties and no voicemail" work ethic of tenacity and determination a solution was found that solved all of the problems and the project proceeded. The teamwork required due to the number of different organizations and authorities involved made Atkinson Engineers uniquely qualified to get the job done and the CWA has publicly stated that this bridge is the last one that will be approved to cross the west canal. This has been proven by a subsequent project for a walking bridge to cross the canal for the San Jacinto College several miles to the South. The solution included a specialized fencing material that could not be cut with conventional tools and a security camera. The fencing material also covered sidewalks to prevent pedestrians from throwing anything over the fence into the canal. After navigating multiple authorities, the project was approved and allowed to proceed.

While the political and security challenges were significant, there were also engineering and construction challenges to be overcome. The bridge needed to span 80 feet at an elevation 10 feet above the neighborhoods on either side and the immediately return to elevations low enough to serve them without a line of site problem. The design of this bridge included 4 vertical curves and 2 horizontal curves, which overlapped each other. Also transporting 80 foot beams to the site through a residential subdivision created challenges for the contractor. When the project was opened it was a proud moment for all of the people involved and it currently saves valuable Galena Park school district funds so they can be spent educating students.



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