



# Flood Risk in Texas County Alleviated Thanks to CSDA Contractor

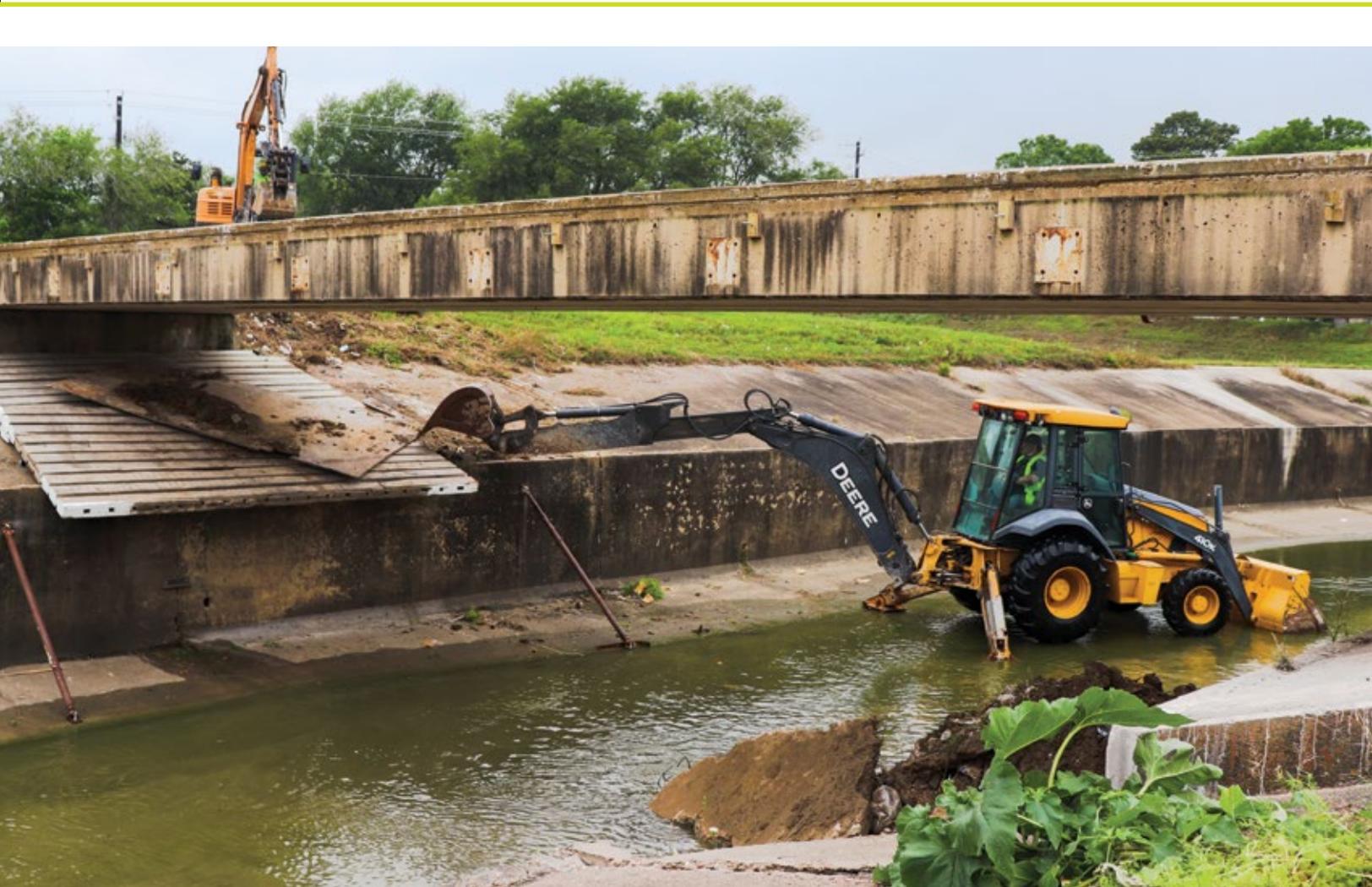


One of the three golf cart bridges prior to removal by Holes.

**H**arris County is the third most populated county in the nation and the most populous county in Texas. With the region being a low-lying, flat area with a higher-than-average annual rainfall, frequent flooding occurs. As a response to floods that devastated the region in 1929 and 1935, the Texas Legislature created the Harris County Flood Control District to manage projects that reduce Harris County flooding risks.

Recent catastrophic flooding in the Houston area caused by Hurricane Harvey spurred the Harris County Flood Control District to initiate projects to help alleviate Harris County's future flood risk through the 2018 Bond Program, which allocated \$2.5 billion in bonds to finance flood damage reduction projects. One of the bond program projects included removing three concrete golf cart bridges, two at Goose Creek in Baytown and one across from Sims Bayou watershed in southern Harris County. A new subdivision is being built next to both watersheds so Harris County initiated the removal of the bridges to produce better waterflow through the bayous. BRH-Garver Construction was awarded the maintenance contract for this project and hired CSDA contractor member Holes Incorporated to cut, hoe ram and remove the three bridges.

The bridges were located in environmentally-sensitive areas and were heavily reinforced with steel. Other methods of bridge removal were considered, but due to the need to protect the bayous and surrounding areas, it was determined that concrete cutting with diamond tools and utilizing heavy equipment provided



Steel plates were installed prior to cutting and demolition.

the safest, most environmentally friendly removal option, while also ensuring a clean cut area after the removal.

The first step of the job for each bridge removal was to install safety steel mats to protect the surrounding area from construction trucks, equipment and the demolition itself. Steel braces were installed on the slope paving underneath the bridge to prevent the retaining wall from buckling during demolition. Next, a Holes operator used a Pentruder 8-20HF wall saw with Diamond Products blades to make the 6" deep cuts at the ends of the bridges, while also cutting off the broken and buckled concrete underneath. These cuts were made parallel with the bridge deck on a sloped area to preserve and protect the wall from buckling, while also protecting the paving under the bridge and the retaining wall. Wall sawing was selected due to the ease of set up and the versatility of the equipment. The equipment was used to saw cut on top of the bridge and beneath the bridge. Mobilization and wall sawing took approximately three and half days, while the remaining five days were used to complete the demolition and removal of the bridge concrete and steel.

Altogether, approximately 1.5 million pounds of concrete were removed from the single 36' by 4' by 3' Sims Bayou bridge and the two 90' by 13' Goose Creek bridges. Holes performed a total of 360' of wall saw cuts at 6" deep on this project.

The Holes-owned and operated equipment used on this job included a Pentruder 8-20HF wall saw, a Komatsu PC 400 excavator, a Caterpillar 321D excavator with hoe ram and a Case mini excavator with hoe ram. The Cat 321 and the mini excavator were both used to hoe rams the bridges, while the Komatsu 400 excavator was used to crush the broken concrete into manageable pieces and load those pieces into dump trucks to be taken to the nearest recycling plant. As rubble could not be left behind in the bayous, a skid steer was used for a more thorough and easier clean-up.

Additional safety measures included performing daily Job Safety Analysis and tool box safety meetings, where the job lead communicated the safety and job plans to all operators onsite. All operators wore standard PPE.



The ends of the bridge were cut using a Pentrunder 8-20HF wall saw.



After the bridges were cut free, heavy equipment helped to demo 1.5 million pounds of concrete.



Sims Creek after the bridge demo and removal.

Holes completed the job within contract, on time and within budget. This was not the first job they successfully completed with BRH-Garver Construction, and it will not be the last. Glen Crawford, Project Manager/Business Development at BRH-Garver Construction, stated “The Holes Incorporated crew did an outstanding job of demolition and removal in a short period of time.” He added, “During the bidding process, the Holes Incorporated sales rep, Eddie Jester, was responsive and very helpful in planning the work with BRH-Garver’s site superintendent and me on several occasions. His responsiveness and crew’s professional prosecution of the Goose Creek portion of the job back up the industry-wide reputation that Holes Incorporated commands as a ‘Top Shelf’ resource for expertise and site-specific solutions.”

CSDA contractors have a reputation for being reliable, efficient, professional and safe on all jobs, and Holes is an exemplary example of those qualities. They were able to quickly come up with a safe, quick and environmentally-friendly solution to the demolition project, effectively communicate with the client and complete the project successfully, on-time and under budget.

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## COMPANY PROFILE

The Holes Companies are service companies specializing in concrete sawing, drilling, breaking, lifting, demolition, scanning, load and haul and specialty wire sawing. The Holes Companies primarily work for commercial and industrial contractors, state highway departments and municipalities. Holes Incorporated, Holes Golden Triangle, LLC, Holes South Texas, LLC and Holes Technology, LP have built a solid track record through 48 years of experience, reliability and reputation.

Holes Incorporated retains veteran employees, which translates into superior problem-solving skills and an ability to provide innovative solutions to your concrete cutting, drilling, demolition and removal needs. Holes employs highly-trained and safety-conscious operators. Thousands of dollars are spent each year to train and equip the Holes team with the latest safety techniques and tools. With OSHA recordables far below industry norms, Holes Incorporated is known as the best in the business. They have been CSDA members for over 45 years.

## RESOURCES

### General Contractor

BRH-Garver Construction LP

### Cutting and Demo Contractor

Holes Incorporated

Houston, TX

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Social Media:

Facebook: Holes Inc

Twitter: @holesinc

Linkedin: Holes Incorporated

Pinterest: HolesInc

### Methods Used

Wall Sawing, Demolition and Removal