

Pre-engineered Acrow Bridges Replace Structurally Deficient Bridges in Terrebonne Parish, Louisiana

Aging infrastructure prompts Terrebonne Parish to Purchase Two Acrow 700XS Truss Panel Bridges



With deteriorating timber piles, two old bridges in Terrebonne Parish were failing and could no longer handle even typical vehicular traffic. Terrebonne Parish Consolidated Government purchased two modular steel bridges from Acrow to replace the critically deficient structures in Houma and Gibson. Acrow's prefabricated panel bridges provided a simple design, reduced installation time and overall project cost benefits, while meeting and exceeding the load and design requirements.

As a result of growing concerns about structurally deficient bridges, Louisiana has become more exacting with its safety standards and structural requirements for both state- and parish-owned bridges. The results of an inspection by the Louisiana Department of Transportation and Development (LA DOTD), exposed critical deficiencies in both the Buquet Street bridge in Houma and the North Bayou Black Drive bridge in Gibson. It was determined that repair was not possible. Terrebonne Parish Consolidated Government (TPCG) issued a Certification of Public Emergency requiring immediate action to replace both bridges, and Acrow 700XS truss panel bridges were selected.

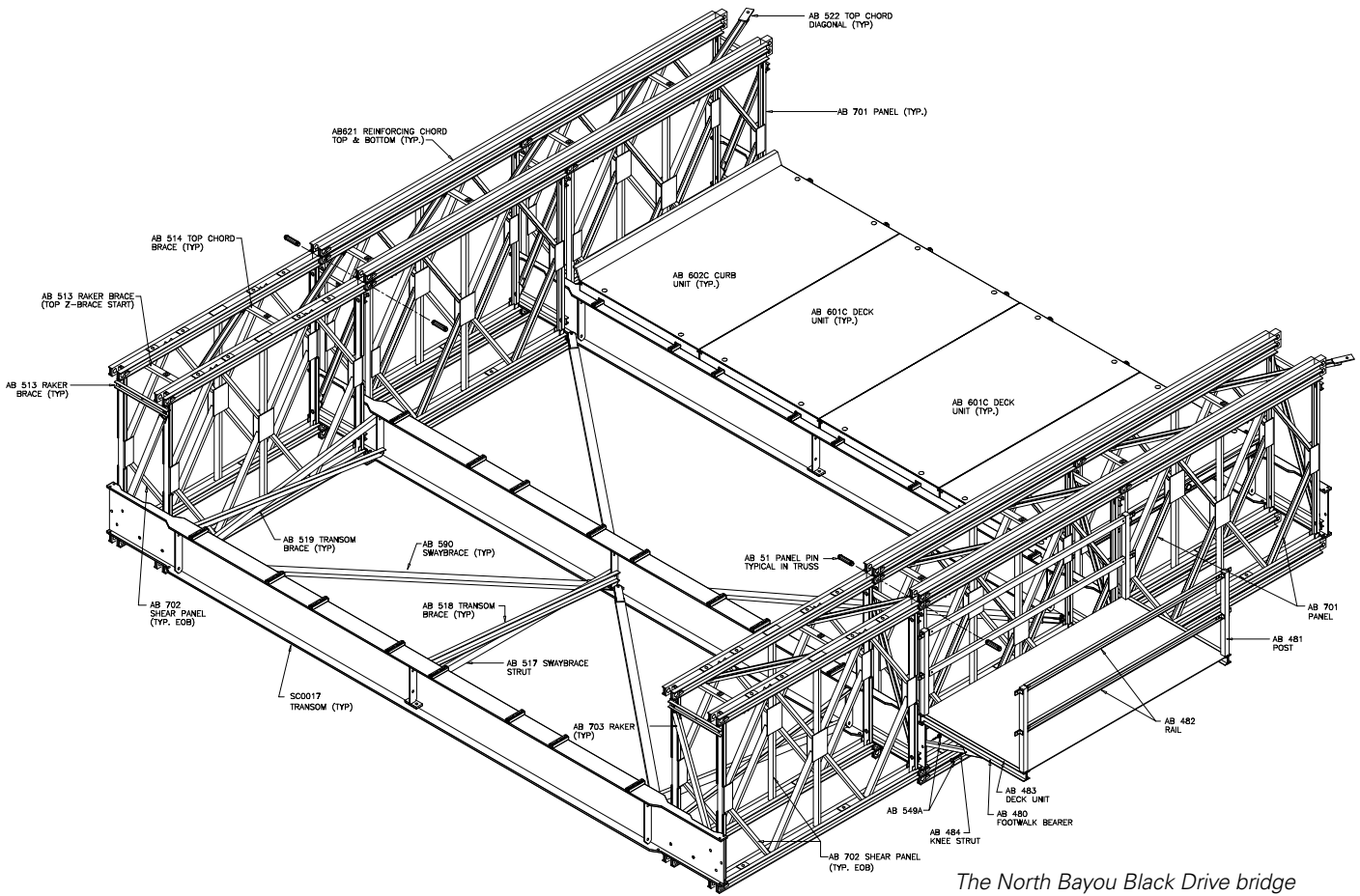
One of the key benefits to using Acrow's structures was the ability of the bridges to completely span the waterways, which is extremely important in the low lying areas of Louisiana where waterways are prone to flooding and debris is often caught in the multiple pier piles of the old design. The Acrow design eliminated these piers, allowing flowing water to carry debris under the single span, eliminating the need for frequent clearing of debris. Acrow prefabricated modular steel bridges are a perfect choice when a cost-effective and rapid permanent

bridging solution is needed. The customizable components can be engineered for many different applications, have an estimated life span of 75-100 years and are virtually maintenance-free.

The Buquet Street bridge serves as a vital east-west connection across Bayou Terrebonne. Built in 1968 with a five-span concrete deck bridge on timber piles, it was replaced with a 90' long Acrow bridge with a 24' wide roadway, an integrated guide rail system with a TL-2 load rating, and a 5' wide cantilevered walkway. The North Bayou Black Drive bridge is located in the more rural community of Gibson, but is critical to residents needing to cross the Donner Canal to access homes and businesses. The old bridge was built in 1962 and had a concrete deck on timber piles; it was replaced with a 70' long by 24' Acrow panel bridge with a TL-2 guide rail. Both bridges included Acrow orthotropic deck system with an extremely durable and long-lasting epoxy aggregate non-skid surface.

Once the bridges were approved and purchased, TPCG bid out the work to install the bridges. Gray Contracting won the bid to install the Buquet Street bridge and SeaLevel Construction installed the North Bayou Black Drive bridge. The design engineer for both bridges was Providence/Gulf South Engineers Associates, LLC.

"The Acrow bridges provided a simple design, quick installation, a long life expectancy while meeting and exceeding the Louisiana DOTD's load and design requirements," said Perry Blanchard, Terrebonne Parishes Public Works Operations Manager. "Acrow met all of our requirements, and the Acrow Bridge staff was always very helpful with answering our questions from the first call to project completion."



The North Bayou Black Drive bridge in Gibson is of similar design.

Specifications

Bridge length:

Acrow supplied the 90 linear ft. of bridging for the Buquet Street Bridge in Houma, LA and 70 linear ft. of bridging for the N. Bayou Black Drive bridge in Gibson, LA.

Bridge width:

24 feet wide (7.3M) bridge, two lanes for both bridges. A 5 ft. wide cantilevered footwalk was provided on the Buquet Street bridge.

Live Load:

Both bridges were designed in accordance with the latest edition of the AASHTO LRFD bridge design specifications to HL93 vehicular.

Deck surface:

Epoxy non-skid coated deck

Bridge finish:

- All major components galvanized to AASHTO M111 – ASTM A 123
- All bolts are hot dipped galvanized
- All pins are electro galvanized

Bridge erection:

Both bridge structures were installed using a crane assisted cantilevered launching method provided by Acrow.

Bridge design:

- (A) Panel chords, diagonals, verticals, panel reinforcing chords, rakers to AASHTO M223 GD 65
- (B) Raker brace, transom, top chord brace, swaybrace, transom brace, diagonal chord brace to AASHTO GD 50
- (C) Panel pins to ASTM A 193 GD b7
- (D) Bolts to AASHTO M164M – A325