

FAST CAST BRIDGE®

PATENT NO. #11,319,679



BUILDING BRIDGES *WITHIN TRIBAL COMMUNITIES*

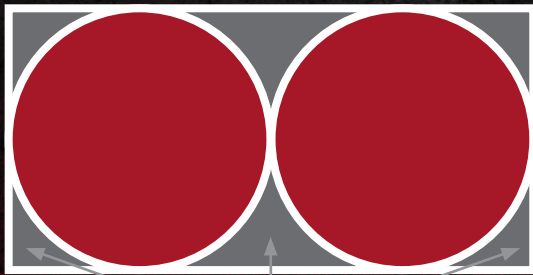


Premier Steel President Andy Vanaman was visiting a friend's rural Oklahoma ranch when they came across a washed-out bridge. Andy's friend wondered aloud if Premier Steel could design a bridge that would not only stand up to Mother Nature but be easy to install. With that comment, the concept of the Fast Cast Bridge was born.

The Fast Cast Bridge fills a need in rural areas for a lightweight, long-lasting, cost-effective steel structure that can be installed quickly and filled with concrete in place. The Fast Cast Bridge meets American Association of State Highway Transportation Officials (AASHTO HL-93) loading standards.

- AASHTO rated HL-93 bridge class box culvert
- Quick installation (1-2 days for bridge) (From grading to cleanup, 4-15 days total)
- Can be completed with force account labor
- Structural design and build is completed in advance
- Only civil design needs to be completed
- Minimally invasive to the environment and greatly reduces the time to reroute traffic
- Eliminates debris catchments
- Increases flow capacities over circular or semicircular structures

TRADITIONAL DESIGNS



VS.



DEBRIS CATCHMENTS

DEBRIS CATCHMENT

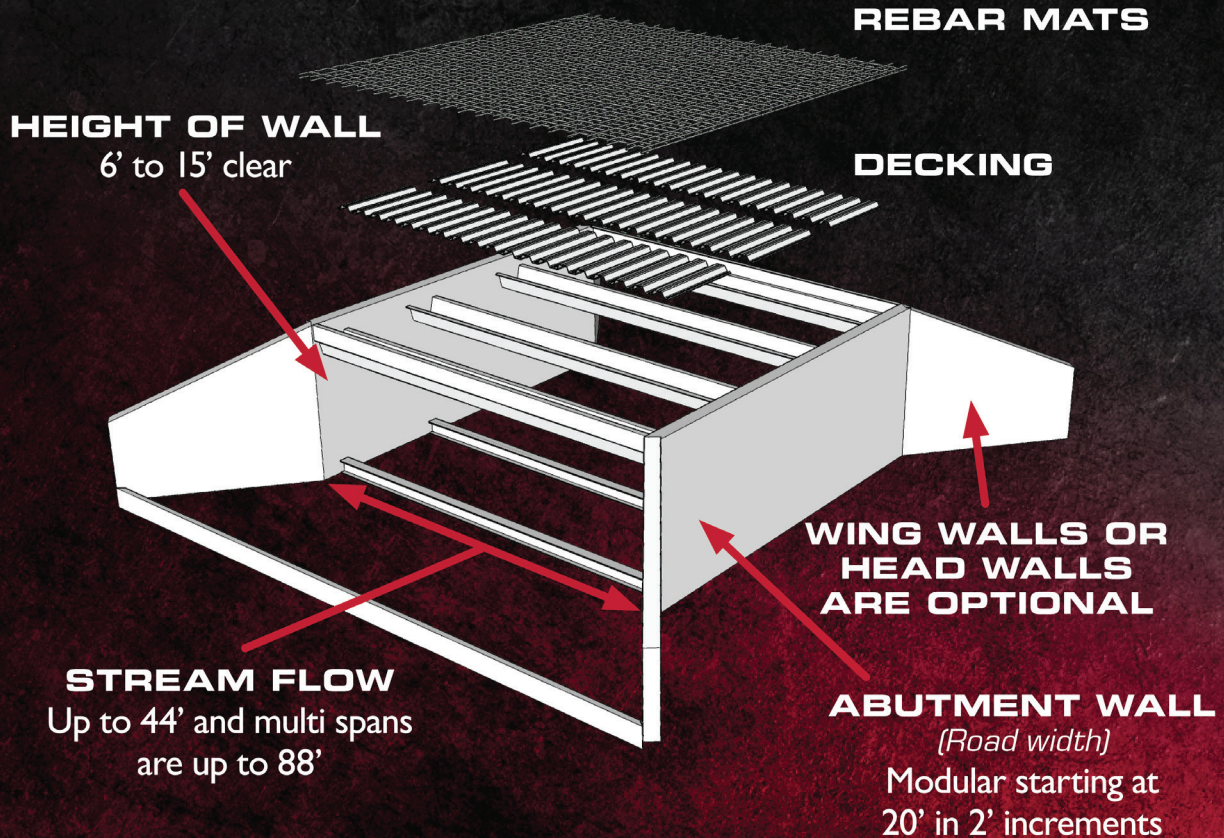
FAST CAST BRIDGE®





- Design Load: MS 18 (HS20)
- Post. Status: A Open, no restrictions
- Posting: 5 At/Above Legal Loads
- Op / 65.Inv. Rating Meth.: 1 LF Load Factor / 1 LF Load Factor

	H	HS	3-3	EV3	SHV
• Operating Rating (tons):	33.30	60.00		71.70	66.70
• Inventory Rating (tons):	20.00	36.00		43.00	

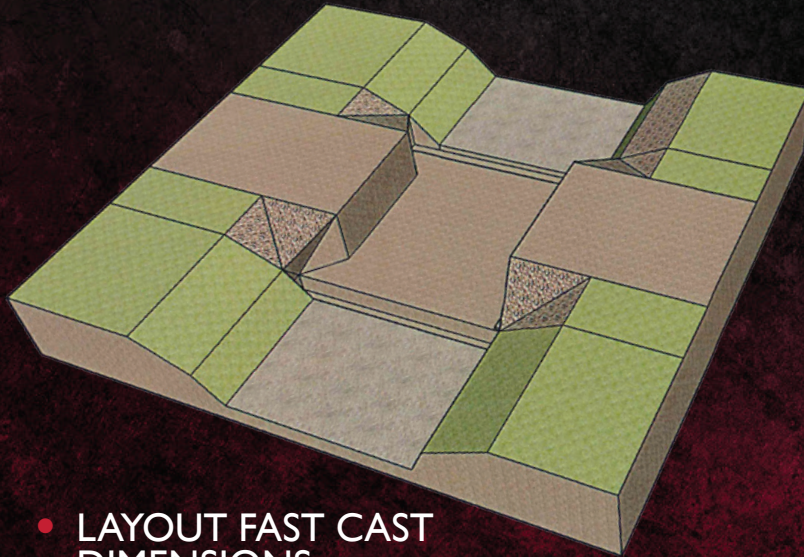




- DEMOLITION, IF APPLICABLE
- EXCAVATION
- BRIDGE BASE PREPARATION
- UNLIMITED TO ROADWAY WIDTHS
- STREAM WIDTHS 8'-40'
- WALL HEIGHT 6'-10'

INSTALL FOUNDATIONS FOR ABUTMENT WALLS

2

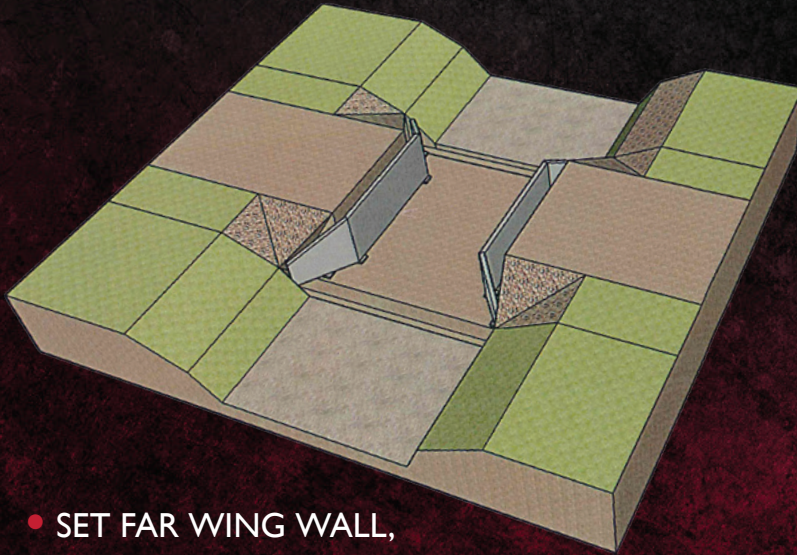


- LAYOUT FAST CAST
DIMENSIONS



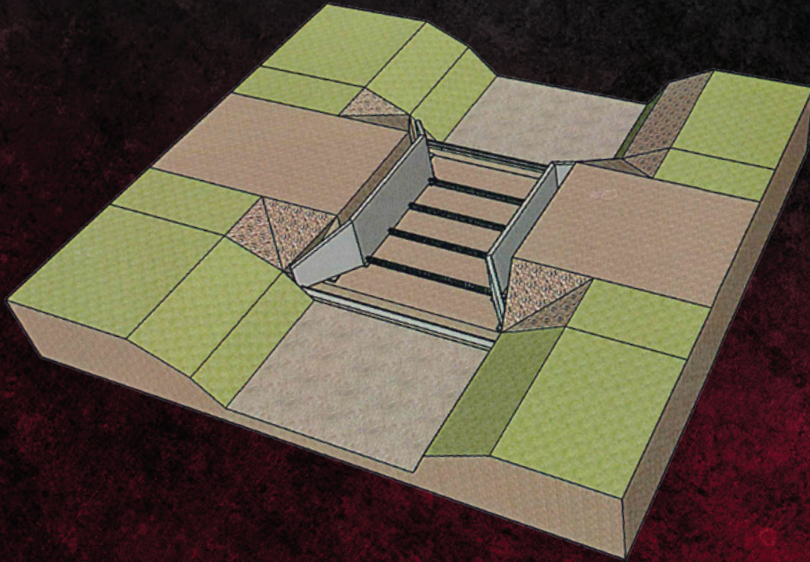
SETTING WING WALLS AND BRACES

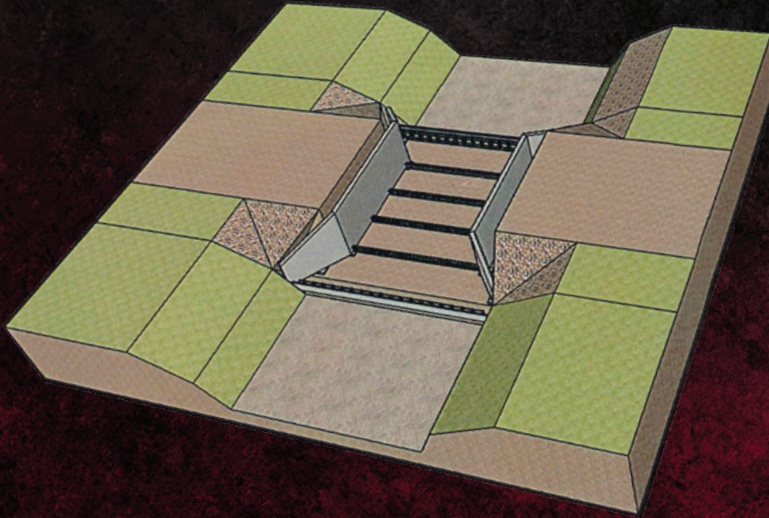
3

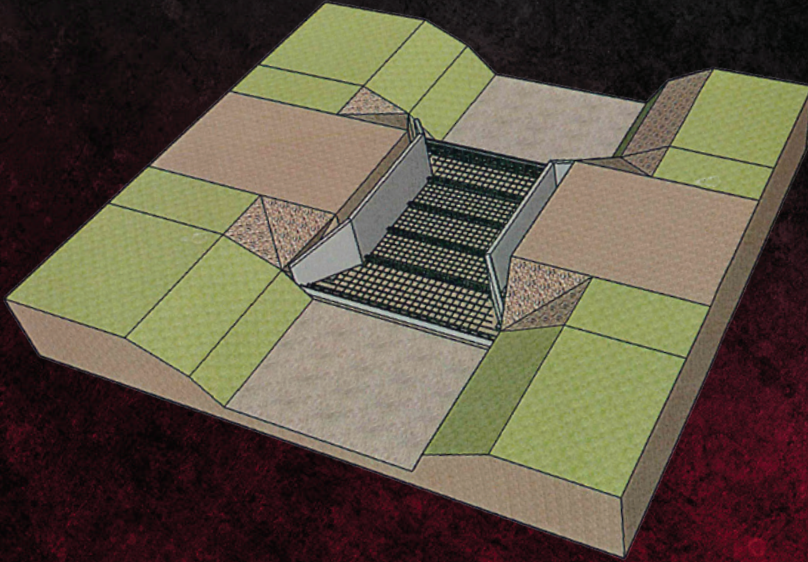


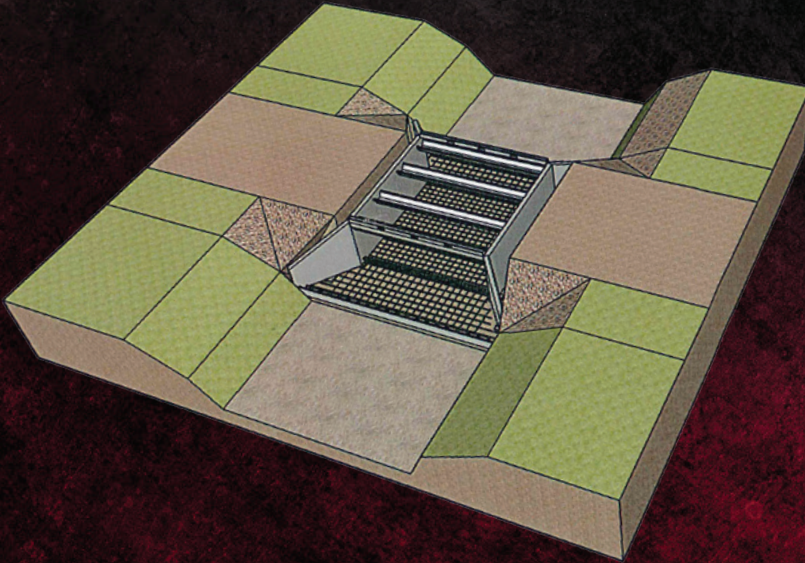
- SET FAR WING WALL,
BRACE AND LEVEL
- SET NEAR WING WALL,
BRACE AND LEVEL





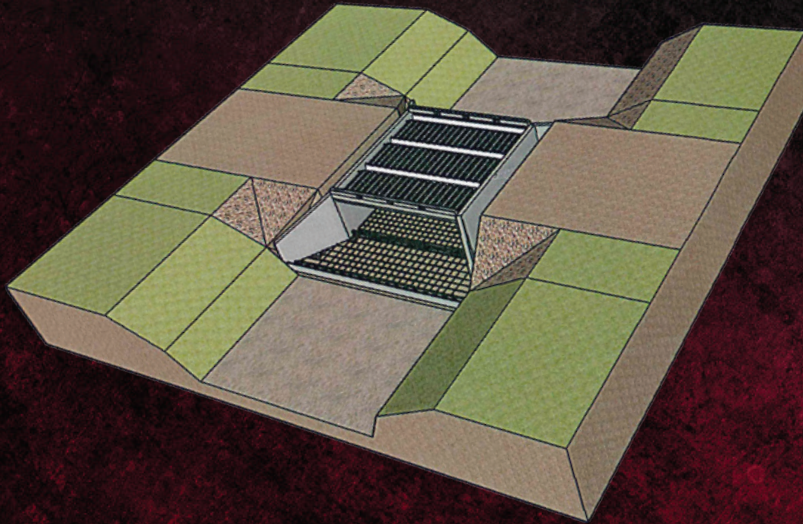






SET UPPER DECK PANELS AND TOP REINFORCING

7







The county did a temporary fix until the
Nation was able to construct



The project started the first of January 2023



Utilities had to be moved,
which put the project 45
days behind





It wouldn't be a project
if there wasn't rain...

The Fast Cast Bridge installation began on March 15, 2023



















Funded by Muscogee (Creek) Nation
Designed by Cross Timbers Consulting
Precast Bridge made by Premier Steel
Contractor was McGuire Brothers

OLD MORRIS HIGHWAY BRIDGE TIMELAPSE



BRYAN SANDERS
PROJECT MANAGER AND TRANSPORTATION PLANNER,
CHEHALIS TRIBE



CHEHALIS BRIDGE INSTALLATION**THE CHALLENGE**

The Confederated Tribes of the Chehalis Reservation in Oakville, Washington, needed to replace a critical bridge connecting homes, farms and businesses on the reservation.

THE SOLUTION

Premier Steel Services fabricated and delivered an 11' x 34' x 40' Fast Cast Bridge.



CHEHALIS BRIDGE INSTALLATION**THE PROCESS**

The following week, the bridge officially closed for demolition, the site was prepped for the new Fast Cast Bridge, and footings were poured.

THE RESULTS

Despite rainy conditions, a local crew began installing the bridge at 8 a.m. on Friday, Oct. 22, and completed it the same day.

CHEHALIS BRIDGE INSTALLATION



CONCHARTY BRIDGE INSTALLATION



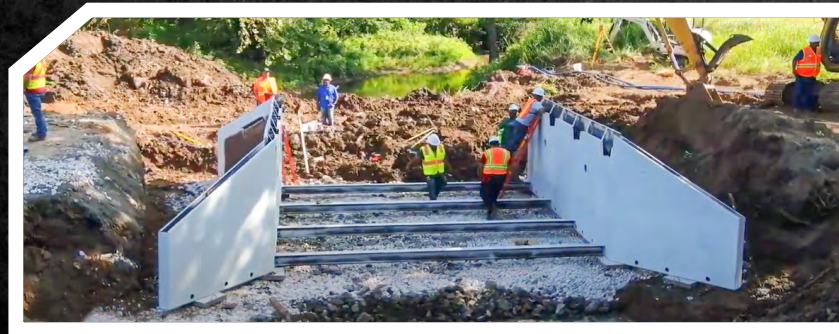
THE CHALLENGE

After heavy flooding in 2019, the Muscogee Nation needed to replace a damaged bridge in rural Okmulgee, Oklahoma. The road leading to Concharty United Methodist Church frequently washed out and became impassable, and the tribe needed a long-term solution.

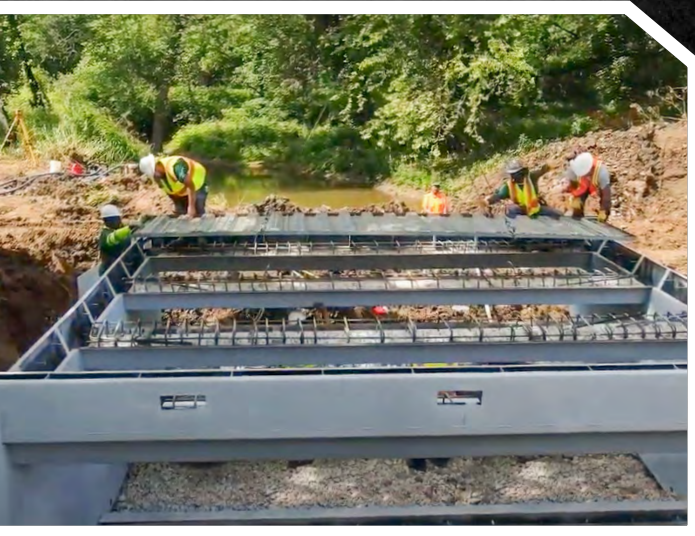
The Concharty Bridge is more than a means for transportation; it is a passage to preserve the longstanding fellowship of the Muscogee people. The tribe needed a turnkey solution, and fast.

THE SOLUTION

In July 2019, Premier Steel custom-designed and built a 8x20x20-foot Fast Cast Bridge® to replace a washed-out, eight-foot circular culvert. It is an AASHTO-rated structure, different than a non-load-rated culvert, and was the first Fast Cast Bridge in the nation to be installed.



CONCHARTY BRIDGE INSTALLATION



THE PROCESS

From ordering the bridge to the reopening of the road, the entire process took only 2.5 weeks. The installation of the Fast Cast Bridge and concrete work was completed by the Muscogee Nation in eight hours, avoiding the typical long-term road closures associated with conventional bridge installations.

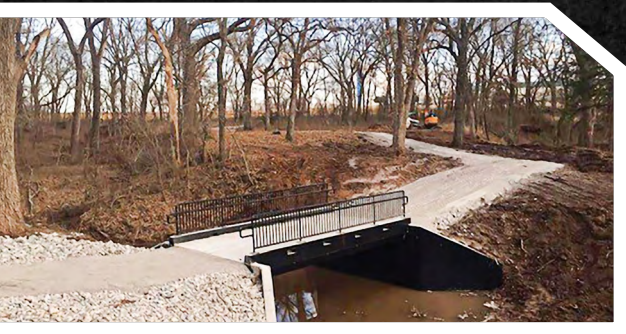
THE RESULTS

The new Fast Cast Bridge, donated by the Muscogee Nation, provides safe access for the Okmulgee community and the members of Concharty United Methodist Church.

CONCHARTY BRIDGE TIMELAPSE



PAWNEE NATION BRIDGE INSTALLATION



THE SOLUTION

Premier Steel custom-designed a 12'x20' pedestrian bridge, complete with a two-line picket guardrail, ADA-compliant handrail and decorative Pawnee Nation seals. From design to installation, the entire process took less than seven weeks.

THE CHALLENGE

The Pawnee Nation secured an Indian Community Development Block Grant (ICDBG) to develop ceremonial grounds and community walking trails at the Pawnee National Tribal Complex. The Nation needed a cost-effective and decorative pedestrian bridge to connect its ceremonial campgrounds to newly developed fitness trails for tribal members and the local community.



PAWNEE NATION BRIDGE INSTALLATION

**THE PROCESS**

The Pawnee Nation prepared the site and installed the bridge with the support of the Premier Steel team. From grading to cleanup, the project was completed in only three days, and installation happened the same day.

THE RESULTS

Despite freezing temperatures, the crew began installing the bridge on Jan. 7, 2020, and it opened the next day. Because the structure was pre-engineered, the Pawnee Nation stayed on budget and reduced the amount of time typically allocated for bridge design and construction by two to six months.

PAWNEE NATION BRIDGE TIMELAPSE



CHEROKEE NATION INSTALLATION

**THE CHALLENGE**

Bald Hill Road provides access to the Cherokee Nation tribal headquarters in Tahlequah, Oklahoma. Due to historical flooding in Cherokee County, a multi-culvert structure washed out and the road was closed.

THE SOLUTION

Premier Steel worked with tribal and county transportation officials to design a 12'H x 36'W x 40'L size Fast Cast Bridge® in 10 days. While the cost is comparable to traditional bridge/box construction, the big savings is time. Construction of a Fast Cast Bridge entails shorter roadway closures and less of an impact to the traveling public and the environment.

CHEROKEE NATION INSTALLATION



THE PROCESS

The bridge was installed in one day—on August 19, 2022—and concrete was poured the following Monday. It was constructed by Anglers GC, LLC, of Porter, Okla. At the time, Anglers had great experience in conventional bridge construction but had never installed a Fast Cast Bridge. The company was excited about the new concept and looked forward to learning the process in anticipation of possible future Fast Cast Bridge installations.

THE RESULTS

In less than a month and a half after placing the order, the Fast Cast Bridge was installed. The road reopened just in time for the tribe's largest event, Cherokee Nation Holiday, an annual celebration that draws tens of thousands of visitors each year.

CHEROKEE NATION TIMELAPSE



TLC200 PRO 2017/11/04 01:32:18



PREMIER
Steel

Q & A

Thank You.



SCAN THE QR CODE WITH YOUR CAMERA AND USE THE FORM TO
SIGN-UP FOR UPDATES ABOUT FAST CAST BRIDGE.