

# Hawaii DOT Uses Special Acrow Steel Structure to Support the Failing Paumalu Stream Bridge on Oahu's North Shore

Deteriorating support piers necessitated an emergency repair to the 87-year-old concrete structure on one of the island's busiest highways



When a state inspection found serious deterioration in the support piers of the 87-year old Paumalu Stream Bridge's support piers, a plan for expedited repairs was undertaken in order to avoid further structural damage. Although the heavily used bridge was repaired as recently as 2014, it was decided to again renovate rather than replace the structure in order to minimize the impact on the public.

Kamehameha Highway, on the north shore of the island of Oahu, is one of the busiest routes around the island for residents, businesses and visitors. A bridge replacement was estimated to require a full closure for up to two years, so an innovative solution from Acrow was chosen.

The temporary structure is a standard Acrow bridge with special floor beams and support steel underneath that wraps around the existing bridge and provides the support needed to allow continued traffic flow during the rehabilitation.

With the support of the bridge and columns in place, Hawaii Department of Transportation (HDOT) employees have been able to safely work on the construction and installation of collars for the support piers. It is expected that the Acrow structure will remain in place until a formal repair can be arranged, which may take several years.

The project posed many challenges from detail engineering to fit up to the existing bridge, to complicated installation of the structure while live traffic was still traveling the busy highway.

Using innovative installation techniques, the Acrow structure was assembled with a truss line on each side of the old bridge and rolled into position, then the support beams were installed underneath along with the special support members for the old bridge.

"This project is a great example of how Acrow modular systems bring creative bridging solutions to difficult infrastructure situations, providing value to contractors and government agencies alike," said Bill Killeen, President and CEO of Acrow Bridge. "Acrow structures are cost-effective and provide safe and dependable passage for area residents and businesses."

The bridge was ordered by HDOT through its emergency contracted construction company Kaikor Construction of Waipahu, HI. Kaikor and Acrow worked closely with HDOT to get the project installed in a timely fashion and with minimum impact to the driving public.

