



SCHUYLER HEIM BRIDGE COUNTERWEIGHT LOWERING

LONG BEACH, CA

SDI Scope

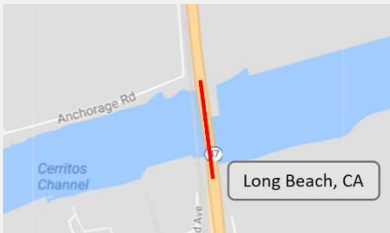
Heavy Lifting: Lowering Counterweights

Contractor

MCM Construction

Owner

California Department of Transportation (Caltrans)



PROJECT DESCRIPTION

Commodore Schuyler F. Heim Bridge was one of three bridges connecting Terminal Island to the mainland in Long Beach, California. This vertical lift bridge in the Port of Los Angeles connected State Route 47 (Terminal Island Freeway) to Cerritos Channel. The towers stood 186 ft above the roadway deck (and up to 236 ft above the channel, depending on tide height). In order to meet California's safety and earthquake standards, Schuyler Heim was replaced by a 6-lane fixed span bridge in 2017. Decommissioning of the existing bridge began in 2015, and SDI helped overcome a significant obstacle; the two counterweights that previously balanced the lift deck had to be lowered down to the roadway. Each of these counterweights weighed 850,000 lbs. and had to be lowered 150 ft; no small task.

SCHUYLER HEIM BRIDGE COUNTERWEIGHT LOWERING

Schwager Davis, Inc.

198 Hillsdale Avenue – San Jose, CA 95136

Tel: (408) 281-9300 Fax: (408) 281-9301

www.schwagerdavis.com

SDI'S SCOPE OF WORK

The original plan prior to SDI's involvement was to erect falsework to support the counterweight. Once supported, the counterweight would be broken into pieces that could be lowered by a crane. This process posed many safety risks and required a great deal of time.

SDI was contacted to design a better solution and engineered a self-contained strand jack system positioned on tower top to lower unbroken counterweights. By utilizing the existing load bearing portion of the bridge's lift mechanism, SDI safely and efficiently installed the necessary heavy lifting equipment.

Once installed, SDI qualified the lift in two ways. First, the load was slowly increased on the rams and monitored to verify load balance. Second, once the counterweights were fully suspended, the system was proof loaded by blocking the counterweight tightly against the structure. The rams were taken to 978 kips, 115% of the working load. After this verification, the lowering could begin.

The lowering process took 16-20 hours per counterweight. The entire operation required one week for each counterweight. SDI's design was safe, eliminating the looming hazards of breaking up and craning down 1,700,000 lbs. of material suspended 150 ft. above the deck; in addition, SDI's system proved faster and more economical than its predecessor.

PROJECT HIGHLIGHTS AND FACTS

- Prior to decommissioning, Schuyler Heim was one of the largest vertical lift bridges on the West Coast.
- Schuyler Heim Decommissioning was completed on time, on budget, with no injuries.

