

Department of Civil Engineering and Geological Sciences

Challenges and Innovation in Civil and Environmental Engineering



Uniquely Constructed Bridges

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When a structural engineer designs a bridge, he or she typically is focused on

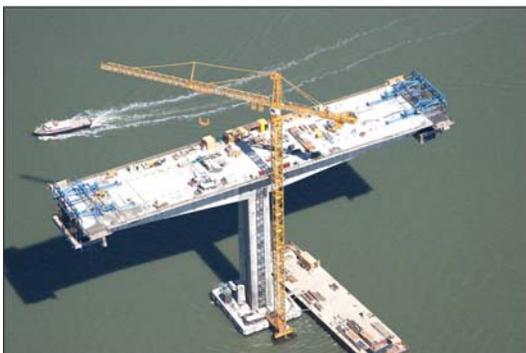
the design loads that the permanent structure is likely to experience during its service life, including dead loads, traffic, wind, and seismic loads.



Occasionally the engineer will consider the loads experienced by the structure during construction, but in most cases the means and methods will be left to the contractor. As a result of this typical contracting arrangement, the contractor is free to explore multiple options and select the most efficient construction methods. Often times the construction sequence selected will cause the structure to be temporarily loaded in a manner that is considerably different from the ultimate design of the bridge. In many cases a significant engineering effort is required to ensure that the structure is not stressed beyond its allowable limits during construction.

This presentation will present case studies of a few of the engineering challenges that were overcome in the construction of the following bridges:

- Papermill Road Bridge (Baltimore, MD)
- Great Platte River Road Monument (Kearney, NE)
- 12th Avenue Bascule Bridge (Miami, FL)
- San Francisco – Oakland Bay Bridge – Skyway Segment (Oakland, CA)
- Benicia –Martinez Bridge (Martinez, CA)



A reception and an opportunity to meet the speaker will take place after the seminar outside of 126 DeBartolo