San Mateo - Hayward Bridge, U.S.A.

Contractor—M.K. / T / W Joint Venture
Owner—Caltrans
1998

proserve
MARINE CONSTRUCTION ENGINEERS

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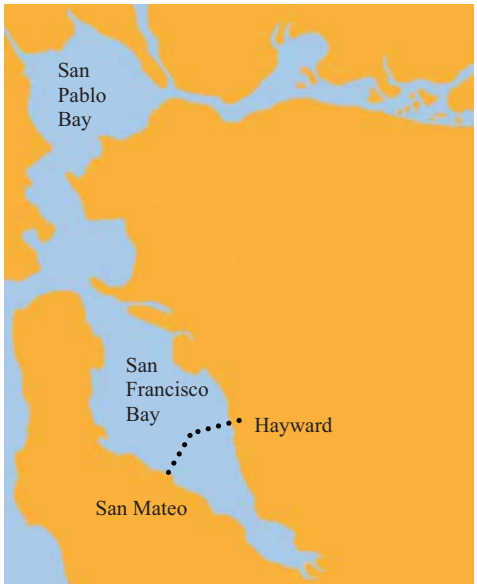
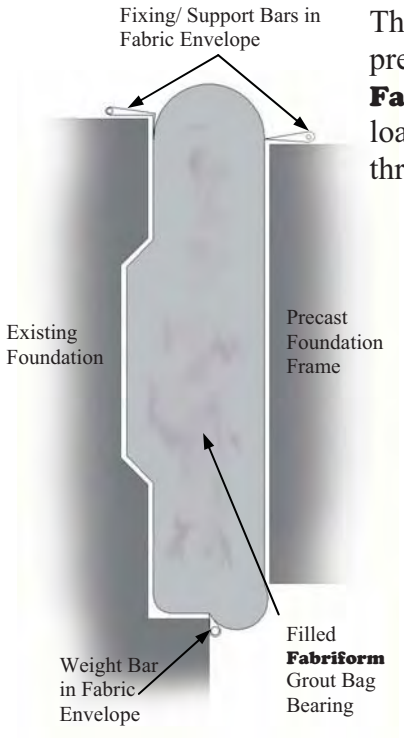
Fabriform

The San Mateo—Hayward Bridge across San Francisco Bay is a 11.3 km long structure. It consists of three sections a 0.1 km approach, a 3.2 km main span across the shipping channel and a 8.1 km trestle structure that ties it to the east bank. In 1993 the bridge was examined and found to require retrofit for earthquake safety. The structure is located approximately midway between the San Andreas and Hayward faults.



Location Plan

Typically the retrofit consisted of Precast Prestressed Concrete Foundation Encasement Frames positioned around the existing footing, and placed upon Large Diameter Steel Pipe Piles to mitigate the seismic vulnerability of the rectangular foundations due to large seismic displacements



Section Through Bearing

The connection between the existing foundation and the precast frame occurs at the inside corners of the precast frame. **Fabriform** Grout Bags were used to provide the horizontal load points between the frame and foundation. A typical section through one of these bearings is shown to the left.

San Mateo—Hayward

To ensure quality of the completed grout bag assembly a sample was tested using an underwater mock-up. The test demonstrated that the grout bag could be filled effectively and that the resulting assembly was fully effective. Sample cores were taken from the completed bag to ensure the cast strength of the bearing would meet the rigorous operational requirements, which they did fully.