

Case Study

Permanent Tiedowns



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Date: April 2002

Job Name: Golden Gate Bridge Abutment Tiedown

Owner: Golden Gate Bridge Authority

Location: San Francisco, California

General Contractor: Shimmick/Obayashi Joint Venture

Located at the mouth of the San Francisco Bay the Golden Gate Bridge is constantly battered by wind and waves coming off of the Pacific Ocean. Since the structure is made of steel and concrete constant repairs are necessary to keep it safe for the millions of commuters traveling over it yearly. Routine maintenance is not always sufficient and in the later part of the 1990's the Golden Gate Bridge Authority decided it was time for a major retrofit of the South abutment. Shimmick/Obayashi JV was awarded the contract for this work. During construction Shimmick/Obayashi JV realized that they had to find a company to install temporary tiedowns in the concrete foundation for the south abutment. Northwest Cascade's Geotechnical Division was contacted. The contractor needed NWC to begin within one week in order to stay on schedule. NWC was able to mobilize equipment from their Richmond, CA yard to be onsite and drilling in three days.

Installation of the tiedowns consisted of drilling through the existing wing walls on the ocean side of the bridge abutment. The tiedowns connected the wing walls to the underlying bedrock so that false work could be constructed upon it and then later a thicker wing wall could be poured. Since the location of the piles was immediately adjacent to the ocean, work could only take place during low tide. This, combined with the extremely narrow access area, turned the installation of comparatively simple tiedowns into a real logistical challenge.



Northwest Cascade Inc.
www.nwcascade.com
800/ 444 - 2371