

# Case Study

## Residential Shoring



**Date:** August, 2001

**Job Name:** Storman Residence

**Owner:** Storman Family

**Location:** Tumwater, WA

**General Contractor:** A L Pfaff Construction

**Engineer:** Sargent Engineers

### PROJECT DESCRIPTION

The Storman residence is set in a hillside with a 65% slope. During the February 2001 earthquake the bulkhead supporting the home moved both vertically and horizontally, causing tension cracks to form in the northern foundation, stem wall, and behind the supporting bulkhead. In order to mitigate hillside failure below the home. The decision was made to install a permanent soldier pile wall with tiebacks along the downhill side of the property to stabilize the hillside. A L Pfaff construction was awarded the contract and contacted Northwest Cascade, Inc. to handle the geotechnical reinforcement. During the construction of the soldier pile wall the engineer recommended the installation of small diameter pipe piles underneath the northern foundation of the home to lessen the chance of settlement, Northwest Cascade, Inc. was chosen to complete this phase of the project as well.

The project consisted of the installation of 15, W14 soldier piles with 4" timber lagging between them to support the soil. Installation of 15 DCP strand anchors commenced after the wall was in place. After the anchors had been tested the foundation was dug out to place and cement the 2" diameter pin piles. The house was then hydraulically jacked until level. The Stormans made the decision to remain living in their home during construction, so client relations were of the utmost importance.



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