Pacific Pile & Marine, LP
700 S. Riverside Drive
Seattle, WA 98108
T 206 331-3873
F 206 774-5958
Lic # PACIFPM922J3

Pacific Pile & Marine, LP
620B E. Whitney Road
Anchorage, WA 99501
T 907.276.3873
F 907.278.0306
Lic # 33893

Small Boat Harbor Surge Control

Work Performed

Pacific Pile & Marine: Constructed a partially penetrating breakwater to deflect swells from Skagway's Small Boat Harbor. Involved driving more than 100 steel piles a 100-ft long pedestrian bridge, wood promenade, and structural welding for steel pile caps and other steel structures.

The new wave attenuator is an arced flat sheet combination wall supported by 24-in dia. by half-inch-thick bearing piles. The wave barrier wall is composed of 20-inch dia. half-inch thick steel pile with flat sheet pile welded to either side. The pile-sheet pile combinations were installed by threading the sheet pile interlocks together to provide a continuous wall. The finished structure was a suspended 30 foot tall steel curtain 290 feet in length to deflect wave action.

The pile driving crew faced high winds and rough seas with a 25-ft tide ranges while driving 140- to 160-ft long 24-in dia. battered bearing piles. To minimize pile spliced in these conditions, most of the pile was driven full length. Driving the bearing pile in one piece reduced the crew's exposure to the severe elements and decreased time spent staged on over-water templates. By minimizing the need to access work on icy template beams in windy, dark conditions, fall and other risks were significantly reduced.

Due to seasonal restrictions and environmental constraints, work took place during the winter months. Support crews dealt with large snow packs, heavy winds, and low temperatures; average temperatures ranged from 22 to 31 degrees Fahrenheit before accounting for the near constant wind. Daylight was limited during the construction to four hours of daylight in addition to frequent overcast conditions.

In order to complete the project in the short work window, crews worked an average of six 12-hour shifts each week. Days off were scheduled around weather days. If weather was especially severe, work would shut down until safe operations could resume. Balancing the need to maintain operations without compromising our commitment to safety allowed the project to be successfully completely without injury.

Location:	Skagway, AK
Contract Amount:	$3,300,000
Performance Dates:	Aug-2009 - Jan-2010
Client:	Municipality of Skagway
Contact:	Todd Nottingham