



PND's geotechnical program includes investigation, exploration, and testing. PND's innovative geotechnical solutions have supported the design of critical infrastructure throughout Alaska, the Pacific Northwest, and beyond, including piers, docks, and pipeline supports. Our AASHTO-accredited laboratory, modeling/software, and geotechnical explorations all add up to better data and precise, reliable builds.

“ PND are problem-solving project partners. Not only would I recommend them without reservation, I insist on working with them on any aligning opportunity presented.

—LARS WAGNER, PE, VICE PRESIDENT OF
OPERATIONS WESTERN U.S. DIVISION,
PERINI MANAGEMENT SERVICES

USCG RESCUE 21 COMMUNICATION TOWERS

PND provided structural, geotechnical, and construction support services with Tutor Perini for this extremely remote design-build project for the U.S. Coast Guard at various locations in Southeast Alaska. PND designed the structural foundations for four radio communication towers—two on Kodiak Island, one within Tongass National Forest, and one within Glacier Bay National Park & Preserve. Our team encountered multiple challenges during fieldwork, including failing equipment and misrepresented soil/rock conditions from the consultant's geotechnical report. PND provided innovative solutions in the field that saved the client time and money, allowing our team to turn over critical USCG facilities on time and weeks ahead of the winter season.



ICY STRAIT POINT GONDOLAS

PND provided award-winning design services under a design-build contract for two gondola systems and support infrastructure at Icy Strait Point (ISP) in Hoonah, Alaska. PND provided structural and geotechnical engineering, including foundation design for an ADA-accessible gondola that moves up to 2,800 passengers hourly over a half-mile between cruise berths and another gondola for transporting visitors 1,600 feet up Hoonah Mountain to ISP's most popular attractions. The complex topography required rappelling to tower locations and flying in construction materials with a helicopter and sling; PND used helicopter-portable drill rigs, oriented rock coring, and televiewer logging to assess subsurface conditions and inform design development.



PIKKA DEVELOPMENT

PND has been providing multidisciplinary services to Oil Search Alaska and Santos for the Pikka oil field development on the North Slope of Alaska for over a decade, executing several field investigations, including two winter geotechnical campaigns north of the Arctic Circle. PND has managed geotechnical investigations, gravel delineations, and drilling and sampling programs for developing 37 miles of roadways and discovering gravel material sources to support the various infrastructure, including the Seawater Treatment Plant (STP) Dock in Prudhoe Bay at Oliktok Point (pictured at left). PND provided adfreeze pile foundation design for facilities and bridges, thermal analyses, climate change analysis, and forecasting following Intergovernmental Panel on Climate Change modeling methods.



SAND POINT DOCK REPLACEMENT

PND provided multidisciplinary services for a new 222-x-69-foot pile-supported, concrete platform ferry terminal and multiuse dock, including preliminary engineering reports, permitting, bathymetric/topographic survey, metocean studies, geotechnical analysis, detailed dock design/specifications, nonlinear seismic analysis, prestressed concrete design, steel/concrete seismic detailing, and bid/construction support. The design featured two mooring dolphins with associated catwalks, uplands fill, and revetment. PND conducted numerical analysis of the existing and expanded causeway to evaluate total and differential settlement and stability. The dock sustained multiple 7-magnitude-plus seismic events in 2020 and 2021 with no reported structural damage.

