

Ski Haus Salem, NH



Description: Construction of a two-story, 7,000 ft² ski shop immediately adjacent to a single-story commercial building and located about 140 feet west of the Spicket River. Column loads ranged from 30 kips to 167 kips.

Subsurface Conditions: A 3 to 8-foot thick layer of variable granular and rubble/debris fill underlain by an interbedded river deposit consisting of loose to medium dense sand and silt with groundwater noted at a depth of approximately 2 to 4 feet across the site. A 3.5 to 6-foot layer of loose organic silt at depths of up to 14 feet was encountered along the north and east perimeter walls of the building.

Design Details: When conventional excavation attempts had proven ineffective from recent heavy rains, a Geopier® foundation system was chosen to provide optimum support for foundations. As an alternative to timber piles or a sheeted excavation, Geopier support was designed and constructed beneath the north and east perimeter walls to permit construction of the proposed footings to bear on Geopier reinforced fill and river deposit soils. Within less than two weeks from the initial call, the Geopier support system was designed and installed to effectively address unstable subsurface conditions which were creating concerns for possible undermining of an adjacent building and parking area. A total of 39 Geopier elements were constructed in only two days, allowing the General Contractor to proceed with construction as scheduled. Vibration monitoring showed peak particle velocities of less than 0.75 in/sec at a distance of 15 feet away during installation.

Geopier Licensee: Helical Drilling, Inc. - Braintree, MA

General Contractor: Prism Builders, Inc. - Wakefield, MA

Owner: Ski Haus, Inc. - Salem, NH

Architect: Udelsman Associates - Hollis, NH

Geotechnical Engineer: HTE Northeast, Inc. - Bedford, NH

Structural Engineer: HTA/Kimball Chase - Portsmouth, NH

References: Mr. David Udelsman - Udelsman Associates - (603) 465-0960

Mr. Eric Teale - HTE Northeast, Inc. - (603) 668-1654

Mr. Paul Sbacchi - HTA/Kimball Chase - (603) 431-2520

Mr. Ed Morrison - Prism Builders, Inc. - (781) 246-1900