

A CASE HISTORY

Piers Save Credit Union

Job Description:

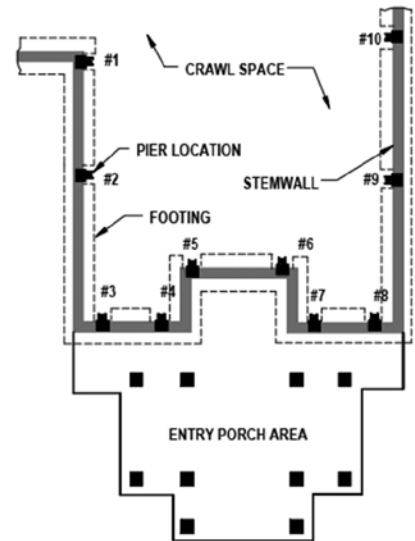
In Montrose, CO, this light commercial structure is of wood frame and masonry construction. The foundation consisted of a shallow concrete footing situated only 12 to 18 inches below grade. Supporting the structure was a short reinforced concrete stem wall approximately three feet tall. The engineer requested a plan to stabilize and restore the building with the least disturbance to the employees of the credit union and customers. The installer submitted a plan to install the Atlas Resistance® Piers from the crawl space. This plan achieved the goal of the management of the credit union and the engineer.



Background Information:

Two key factors were the cause of the settlement of the entry area of this structure. First, the foundation was constructed at an extremely shallow depth. Second, there was a serious drainage problem adjacent to the shallow foundation caused by discharge from the downspouts.

The soil profile consisted of highly weathered claystone and shale over gravel that was located at a depth of 40 to 44 feet. In the areas of poor drainage, the claystone had become extremely soft and offered very little support to the footings. This cost effective restoration project could not have succeeded so rapidly without the use of Atlas Resistance® Piers. The occupants reported only minimal disturbance during restoration.



PIER LOCATION PLAN

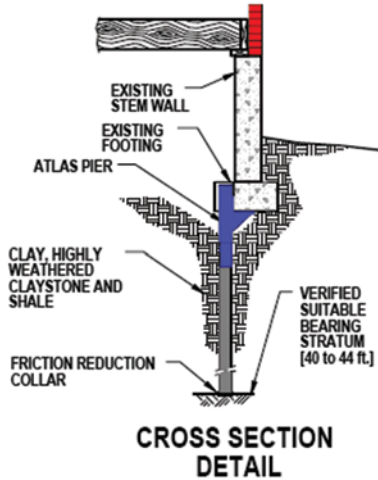
Quickly Installed:

The Atlas Resistance® Piers were driven to suitable bearing at 40 to 44 feet and tested during the application of the working loads. The sketch above shows the pier layout for support and restoration of the area near the covered entry porch.

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PROJECT SUMMARY	
Number of Piers:	10
Part Numbers:	AP-2-UF-3500.165PA
Avg. Install Depth:	41-3/4 feet
Avg. Working Load:	40,685 Pounds
Ultimate Capacity:	85,000 Pounds
Factor of Safety:	2 : 1 (Ultimate to Avg. Working)

The sketch below shows a cross section detail of an Atlas Resistance® 2-Piece Pier as it was installed on this structure. You can see how the load has been transferred from the failing soil to a tested load bearing stratum some 40 feet below the surface.



On this project the 3-1/2-inch diameter pier pipe had a triple coat corrosion protection of zinc chromate and flow coat galvanize. The pier bracket and top pier platform were supplied mill finish steel. During installation all components of the pier system were carefully aligned to install the pier vertically. This insures proper load transfer of the structural weight to the pier assembly.

Uniform Load Transfer:

After the 10 Atlas Resistance® Piers were installed and driven to the verified bearing stratum, the piers were loaded using hydraulic rams. As each pier was installed and as the load was transferred from the footing to the Atlas Resistance® Pier, the forces were recorded, depths measured and the factors of safety calculated.

Success:

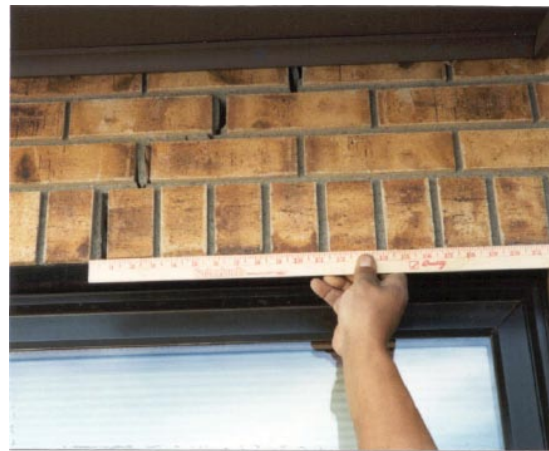
Above right is a photograph of pier No. 7 after recovering 1-1/2 inches of floor elevation. The photos below show a recovery of approximately 60 percent at a masonry tension fracture along the side of the structure near pier No. 10. The final step for this project was to improve the site drainage and to direct the downspouts away from the foundation.



Notice how the footing was notched to allow the Atlas Resistance® Pier to be installed as close to the stem wall as possible.



BEFORE



AFTER