Owner: Broadway Lofts, LP
General Contractor: CF Jordan Construction, LLC | Jeff Hill (214) 349-7900
EOR: Beiker Martinez Engineering, Inc. | Roger Martinez (210) 824-2908
Completion Date: December 2010 | Ultimate Pile Capacity: 250/420 kips

PROJECT SUMMARY — Broadway Lofts Luxury Apartments

Project Description: In the early 1990's, Developer George Geis began planning a large multiuse residential, office, retail project just south of I-35/37 on Broadway in San Antonio, Texas. Construction began for Village del Rio in early 2003, but the project was abandoned in mid 2005 when disputes regarding performance led to litigation between the owner and general contractor. The project was resumed in 2010 under new ownership, Broadway Lofts, LP, and new general contractor, CF Jordan Construction, LLC. When work was resumed, the building's shell was complete, but no finish work, exterior or interior, had been undertaken. A unique feature with the project was two large pedestrian bridges which would allow tenants and residents to pass back and forth over Avenue B from building to building and to access the river. While the buildings' foundations were supported on deep drilled shafts, no provision had been made for the bridge foundations. The design called for a service load of 125 kips per leg with a factor of safety of 2:1.

Subsurface Conditions: Geotechnical explorations were made by Drash Consulting Engineers, Inc. and Terracon Consultants, Inc. Both reports identified very stiff, highly expansive clay to a depth of ± 33' below grade. Extremely hard blue/grey Claystone (Shale) was found from ± 33' to boring termination at 90'. Water was encountered in most all borings at a depth between ± 13' and ± 19'.

Design Details: With the presence of water in all borings, CF Jordan anticipated casing being required at all drilled shaft

POWER LIFT FOUNDATION REPAIR INC.

PROJECT SUMMARY — Broadway Lofts Luxury Apartments (CONTINUED)

locations. Dealing with the water beneath the site during drilled shaft construction would be costly and slow. Having learned of Power Lift's large capacity helical piles, CF Jordan personnel quickly realized that helical piles were the perfect solution for their problem.

For the project, Power Lift chose a combination helix of 16" O.D. and 20" O.D. x 1" thick grade 50 plate. The pile shaft selected was 7" O.D. x .408 wall thickness, 55 KSI. The piles would be advanced and founded in the blue/grey Claystone (Shale). To confirm the piles capacity, a test pile was installed and a load test conducted. The test pile was seated ± 46' below grade with installation torque of 80,000 ft/lb. Knowing the piles capacity would exceed the design ultimate of 250 kips, Power Lift planned two load tests. The first would test the pile to the ultimate of 250 kips, while the second would test the pile to failure, or 1.8" per ICC AC 358 Section 4.4.1.1 or the mechanical limits of the pile shaft which was 420 kips. After unloading the pile at an ultimate load of 250 kips, the pile had moved just .0111". Once that test was completed, test two began. As the load increased, the pile experienced such minute movement that the pile continued to be loaded to its mechanical limit of 420 kips. After unloading the pile, the average net movement recorded was .066" or 1/16".

Considering the outstanding results of the load test, the design was accepted and the project completed on time and within budget.