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Specialty Engineer: Smith Engineering, Inc. | Brian Smith (318) 741-1088  
Completion Date: June, 2009 | Contract Amount: \$131,000.00  
Maximum Column Load: 194 kips | Lift Amount: 2 3/4"

## PROJECT SUMMARY

### Kilgore College – Porter Business BLDG.

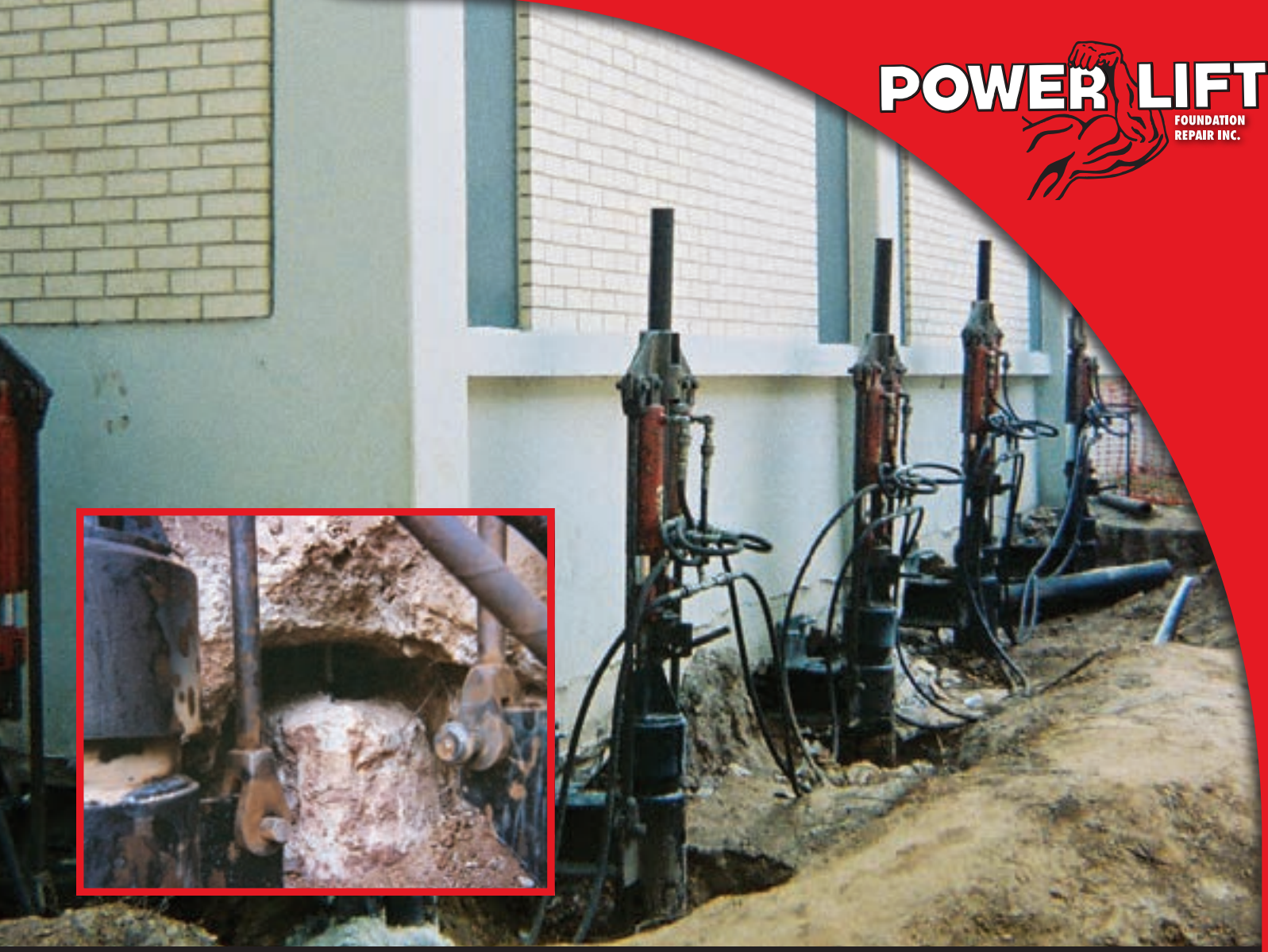
**Project Description:** The multiple story concrete framed business building had experienced settlement for several years. Cracking of the masonry veneer, sloping interior floors, and

inoperable doors were present as typical with most settlement problems. Tired of continual adjustments to maintain operations, the College decided underpinning was in order.

**Subsurface Conditions:** Expansive clays were present to a depth of 30'. The soil borings reflected desiccated soils in the upper 10' to 15', likely







**PROJECT SUMMARY — Kilgore College – Porter Business BLDG. (CONTINUED)**

associated with large trees located close to the structure. A clayey shale formation was located at a depth of 20' and beyond. The Engineer of Record determined that support elements bearing in the shale would be suitable for underpinning the structure. However, the contractor was charged for the complete design of the underpinning system.

**Design Details:** Power Lift worked with Smith Engineering, Inc., in designing a large capacity helical pile underpinning system for the project. 8-5/8" O.D. piles with ultimate capacities ranging to 300 kips were designed. The piles were equipped with multiple 3/4" helical flights and were founded at depths exceeding 25'. Foundation support brackets were manufactured with sleeves to stiffen the piles in the high moment area due to the eccentric load. Once all piles were installed, foundation load was transferred to the new helical piles. The original concrete drilled shafts were

severed from the grade beam and Power Lift's synchronized lifting system was utilized to raise the foundation to the correct elevation. Once raised, the piles were welded to the foundation support brackets, and the building was permanently supported on Power Lift's Power Torque Helical Steel Piles.

