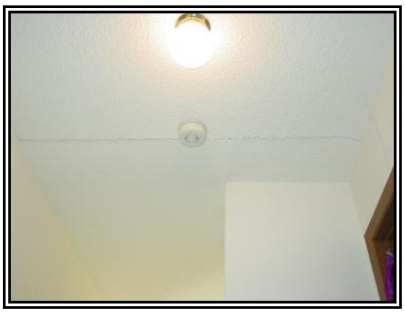
ROCKY MOUNTAIN STEEL PIERING INCORPORATED

CASE STUDY

Project: Young Residence, Littleton, Colorado

Underpinning Contractor: Rocky Mountain Steel Piering, Inc.

Structural Engineer: National Home Insurance Company



Project Description:

The home consists of a two-story structure with a partial basement along the east portion of the home and partial crawlspace along the west portion of the home. The foundation system supporting the foundation walls and interior steel columns consists of a drilled concrete pier system. The two adjustable steel columns within the crawlspace were found to be inadequate to support their intended loading due to the columns being severely out-of-plumb. The columns were also bearing on the outside portion of the drilled concrete piers below. Due to the apparent leaning of the columns, significant distress was observed within the living space above this area.

Repair Description:

The repair to the affected columns within the crawlspace consisted of installing helical steel piers at each adjustable steel column location and bracing the steel support beams above. The helix piers were installed by Rocky Mountain Steel Piering, Inc., utilizing a portable torque head to advance the piers into the ground. The helix piers consisted of 1-1/2-inch rounded corner square steel shafts. The south-most pier consisted of a single 8-inch helix pier, which was advanced approximately 43 feet into the ground. The north-most pier consisted of a double (8-10) helix pier, which was advanced approximately 28 feet into the ground. The piers were advanced to a minimum torque of 4000 ft-lbs as specified. The torque was verified by utilizing a pressure dial gauge, which was attached to the hydraulic foot control for the torque head. The tops of the piers were fastened to pier brackets, which were encased in a concrete pier cap. After the piers were installed, new adjustable steel columns were installed and the support beams were braced.