New Foundation & Structural Floor Stabilizes Residence
Broomfield, Colorado

PROJECT SUMMARY

Scope of Repair:	Place 65 Model 350 ECP Steel Piers at average depth of 30 feet
Engineer:	York Engineering & Survey Services, Inc. of Denver, Colorado

Park Range was awarded contract to install 65 3-1/2 inch diameter hydraulically driven tubular steel pier pipes at an average depth of 30' below the foundation wall to reach a geologic stratum that provided verified end bearing for supporting the structure.

The engineer called for a complete underpin of the foundation and a new basement floor system for this unstable upscale residence. The house was built upon expansive soil using shallow concrete caissons. The extensive renovation consisted of installing 65 steel piers inside the basement, excavating soil from the basement area, disconnecting and abandoning the original concrete caissons that supported the structure, installing a new perimeter drainage system and installing a new Ranger™ structural floor system. The Ranger Floor™ is a galvanized steel and reinforced concrete structural floor system installed exclusively by Park Range. The Ranger Floor™ has been field tested and rated for 100 years. Power venting is not required, floors are not cold, wood rotting and mold are not a problem and soil odors are substantially reduced because it is a closed system. The Ranger Floor System™ is installed for new construction or retrofit.

Each pier was advanced through the expansive soil 30 feet to a load bearing stratum. Once reached, each ECP Steel Pier™ was field load tested. This field load test consisted of placing a force greater than the required design load on each pier.

At each of the 65 pier locations an underpinning pier bracket was attached to the foundation. Once all piers were installed, inspected and load tested, the structural weight was transferred from the concrete caissons under the structure to the ECP Steel Piers™.

With all of the ECP Steel Piers installed, tested and loaded; the project was ready for installation of the perimeter drain pipes and the new structural floor system. The new floor design was supported off the ECP Steel Piers™ and the existing concrete foundation walls. The floor spanned above the soil under the house. This design provided support and stability to the entire structure on the 30 foot deep ECP Steel Piers™. The structure would no longer be subjected to the shrinking and swelling of the expansive soils found near the surface. The project was completed on time and within budget.

PARK RANGE
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