GeoTech Foundation Company - West®
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PROJECT DESCRIPTION

PROJECT: U-Haul Self Storage Facility

LOCATION: U.S. Highway 121 and Texas Highway 360 Grapevine, Texas

CONTRACTOR: Marathon Builders, Inc.

DESCRIPTION:

- 4-story steel framed structure with brick veneer and post-tensioned slabs
- Column loads range between 144 kips and 388 kips

SUBSURFACE CONDITIONS:

- 8’ to 13’ of fill soil consisting of gravel and chunks of concrete within a matrix of clay and silt soil, overlying
- Approximately 30’ of natural soil consisting of medium-stiff clay and clayey sand overlaying Woodbine sandstone

Initial plans were to support the structure on drilled shafts end-bearing on Woodbine sandstone (40 feet below grade) or on shallow foundations underlain by 8 to 13 feet of overexcavated and recompacted fill. As a value engineering alternative, 246 twelve-foot long Rammed Aggregate Pier® (RAP) elements were installed in six working days to limit foundation settlements to less than one inch. Design parameters used in the Geopier design were shown to be conservative by two full-scale Geopier modulus tests.

ADDED VALUE:

- Significant foundation construction cost savings
- Significant reduction in construction time
- Significant increase in allowable bearing pressure resulting in a reduction in the quantities of foundation concrete and reinforcing steel