

Installer: Ram Jack of Tennessee · Milan, TN · 731.686.0370

SITUATION

FedEx CEO., Fred Smith donated 2.5 million dollars to the University of Memphis to cover the cost of a new high-definition video board in the Liberty Bowl Memorial Stadium's south end zone. Due to the new (sail) height, engineers on the project called for [4] four drilled shafts to 40 ft. filled with concrete to support steel I-beam columns. After the outer two piles were installed they realized that during the due diligence phase of the project, the engineers missed a field of utilities; gas, water and electricity directly beneath and smack dab in the way of the remaining two pile locations. Additionally space constraints demanded they look elsewhere for a solution.

SOLUTION

Move the remaining [2] two piles to a location between the structure and Stadium using helicals.

CONCLUSION

Patton Taylor Ent. (GC) called Michael Seebeck in to access the situation and design an alternate solution that would allow the project to continue on schedule and budget. Ram Jack designed two [2] foundation support pads to support a 200 kip vertical load (tension and compression). The 200k VL will be transferred from an existing steel scoreboard column support by a W 12 x 65 wide flange beam that will extend outward at a downward diagonal direction and be braced back into the existing steel scoreboard column support. The foundation support pads will consist of concrete caps that will be securely anchored to the ground with [7] seven 2 7/8 inch diameter Ram Jack helical piers. Loads will be transferred from the concrete caps to the helical piers by Ram Jack new construction brackets. The new concrete caps have a minimum thickness of 3 ft. 6 inches and will be reinforced with two mats of steel consisting of fourteen #6 rebar extending in both directions. These rebar mats will be located at the top and the bottom of the new concrete caps. The caps were designed by Joseph John Chappo (TN registration).

Seven helical piers were installed at each foundation support pad using a 7k torque motor fluid power provided by a yanmar backhoe. New construction brackets were attached to the helical piers by 7/8" diameter grade 8 bolts. These over sized bolts were required due to tension requirements.

