Executive Summary

Parkridge 6 is a 7 story 226,000 sq.ft. Commercial office building located in Reston, VA. The building is designed to a maximum height of 115′. The south face of the building is made up of sloping columns that slope outward from the ground level to the roof. The north face of the building contains an arcade created by stepped portions of additional floor area on the second floor through the fifth floor.

The foundation for Parkridge 6 is a shallow foundation system made up primarily of spread footings. The typical floor is a composite system with 3 ¼″ of lightweight concrete on a 2″-20 gauge steel deck. The buildings grid consists of 3 bays in the N-S direction spaced at 37′-2″, 35′-0″, and 37′-2″ respectively. In the E-W direction there are 10 bays with the first bay on both ends being 25′-8″ and all others 25′-0″.

The lateral system for Parkridge 6 is a series of braced frames. In the N-S direction there are 2 frames and in the E-W direction there are 3 frames. The bracing elements of these frames are made up of HSS sections ranging from 8x8 to 12x12.

The proposed alternative system to be studied in the next semester will be a post-tensioned 2-way slab and beam system. This system still allows for the original designs dimensions while keeping within floor to floor height restrictions. A goal that I will try and accomplish with the post-tensioned system will be to use the cables to distribute the lateral load of the sloping columns into the slab and force the slab to act as a deep beam. Along with a study of this alternative system two breadth studies shall be done in the construction management and mechanical options. The breadth in construction management will be an investigation of the scheduling and cost impact of switching to a post-tensioned system. I will also investigate how to phase the construction process to allow tenants to move in as soon as possible. The Mechanical breadth work will look at the impact of the slab openings required by the current mechanical system on the structure.