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**STRUCTURAL TECHNICAL REPORT 2**  
**PRO-CON STRUCTURAL STUDY OF ALTERNATE FLOOR SYSTEMS**  
**EXECUTIVE SUMMARY**  
**OCTOBER 31, 2005**

For this technical assignment, the existing floor system and 4 alternative floor systems were evaluated for the University of Central Florida's Academic Villages. The existing system is a composite deck with a 4" slab. Below are the 4 alternative systems that were analyzed:

- 1. Post-Tensioned Concrete system in North South Direction**
- 2. Post-Tensioned Concrete system in East-West Direction**
- 3. Precast Hollow Core Planks**
- 4. Precast Double Tee Planks**

Both of the Post-Tensioned Concrete systems are viable options as possible floor systems for this structure. A much thinner slab was found when using a post-tensioned system which would result in less weight due to concrete. This will produce a much lighter building w/ less load on the foundation, which can be a benefit in high wind areas such as Florida. Also, the existing system needs additional concrete columns and beams on the first floor to provide additional support for the load bearing stud walls which are not adequate to carry the entire weight of the floors above on their own. Using a Post-tensioned system will provide lighter loads and those extra beams and columns may be able to be eliminated completely upon further analyses. The final two alternatives, while providing a lighter structure than the existing floor system, were ruled out because they are too deep for this type of structure.