EXECUTIVE SUMMARY

The Fairfield Inn and Suites is located on an approximately 8,616 ft^2 parcel of land located on Federal Street directly across from PNC Park in Pittsburgh. The footprint of the building is 93'-7" by 85'-10" and the building has an overall height of 124'-8" from the basement to the top of the penthouse roof structure. The lobby has an 18'-0" floor to ceiling height. While, the typical floor to ceiling height for the rest of the building is 9'-4". The spans are 26'-0" and 31'-0". A total of 136 guest rooms are contained within this building and the plans vary according to type of guest room. The hotel is a 10 story, 78,803 gross ft^2 building with an indoor pool on the main level.

After reviewing the existing conditions, through examination of alternate flooring systems and verifying the current lateral system, it was determined that the structural system meets architectural, strength, and serviceability requirements. The current site of the hotel was chosen by the owner because its location being directly next to PNC Park and within walking distance to Heinz Field, the new Pittsburgh casino, and downtown Pittsburgh being a prime location. For these reasons, the hotel will be kept on the existing site.

This thesis proposal outlines steps that will be taken in order to optimize the existing structural system for the Fairfield Inn and Suites. For the structural depth, the framing system will be redesigned using steel framing members as opposed to the current concrete masonry shear walls. The lateral system will then consist of the core shear walls surrounding the staircases and the strength of serviceability of the system will be checked. The hollow core plank floor with remain as the floor system and will now sit on composite steel beams, with the current spans. The exterior shear walls will in turn be replaced by non-load bearing walls or a curtain wall system due to the steel framing along the exterior perimeter of the building. The foundation will be checked under the new steel framing system.

An architectural breadth topic will be investigated due to the introduction of the steel framing exterior perimeter and interior beams. The steel may have an effect on the current layout of the building. Without the use of exterior load bearing shear walls, a curtain wall system could be introduced accentuating the façade of the hotel and allow more light into guest rooms, as well as open up the lobby space in addition to its 18' ceiling. A construction management breadth topic will be studied as well. The use of steel framing members will alter the construction schedule and cost of building.

Within this proposal, a complete preliminary breakdown of the tasks that will be performed in order to ensure the proposed alternative design is properly analyzed and accomplished throughout next semester.