EARTH AND ENGINEERING SCIENCES BUILDING
UNIVERSITY PARK, PENNSYLVANIA

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Advisor: Professor Parfitt
Technical Assignment 1
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Executive Summary

The Earth and Engineering Sciences building is a 4 story educational and laboratory facility. An additional basement level is located below grade and provides the foundation for the East Wing of the building. The structure encompasses a total of 106,000 square feet of usable space. Construction on this project was type 1B.

The structure consists of several types of materials and uses a composite design scheme. Steel is the primary design material, but it is also integrated with various reinforced concrete elements. The structural steel and reinforced steel are either A36 or A572 grade, depending on the location of use.

The exterior walls are reinforced concrete, while some CMU does exist. Precast concrete panels on granite are used in conjunction with a brick veneer to complete the envelope of the structure. These envelope elements do not provide significant strength benefits however as they are anchored to the main structural system.

The codes used in analysis are as follows:
The seismic and wind loads will be calculated from the ASCE7-02. Live and Dead loads will be taken from the schematics and available ASCE7-02 information. The BOCA 1993 code was used by the structural engineer.

A spot check will be performed later in this report to illustrate the structural integrity of the existing elements. The 3rd floor will be checked under full gravity load.