Executive Summary

Technical Assignment #3 was an investigation into alternate systems and methods for analysis. The following are a list of topics addressed within this document: Site Layout Planning, Temporary Utilities, Detailed Structural System Estimate, General Conditions Estimate, and Research and Analysis Methods.

The site layout planning consists of three distinct site plans for three phases of construction for the National Museum of the Marine Corps project: excavation phase, steel erection phase, and finishes phase. The site layout of a construction project is very dynamic and adapts to different stages of a project. The site plans included in this document along with narratives illustrate the dynamic nature of a construction site plan.

Temporary utilities are essential aspects of all construction projects. Temporary utilities consist of a wide-range of items. Included in this document are the temporary utilities as required by the contract specifications along with the temporary utilities required for the structural erection phase of the project.

A detailed structural system estimate was done to provide a breakdown of the costs associated with the structural system of the building. The museum consists of two main structural components: steel and concrete. Excluded in the detailed structural estimate are foundations and the entire skylight system (including steel framing).

A general conditions estimate was developed in order to track the costs associated with managing the project and all the necessary temporary utilities and facilities required for the duration of the project. All of the costs associated with both the general conditions estimate and the structural system estimate came from the R.S. Means Costworks 2004 software.

Finally, a description of the research that will be conducted throughout the upcoming semester has been included. The main research will be on the role of the construction manager in the design process. The other two areas of research will be on a structural redesign of the inner ring wall / earth retainage methods and an in depth look into the steel erection sequencing and the implementation of 3D/4D technology to improve upon this process.