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### **Final Report**



### **Executive Summary**

The following report is an analytical approach to describe the details of a new lighting design for a few spaces of the Harris Theater for Music and Dance. The lighting design was given the most consideration throughout this analysis, and was integrated into a construction management cost study as well as an acoustical study. The electrical design is also affected by the lighting design, so the changes to that system are also included in this report. The four main sections of the report are described below.

The Harris Theater for Music and Dance provides spaces for a number of different functions. The spaces I focused on to analyze the lighting design are the entrance, lobby, theater, and main offices. This variety of spaces provides an opportunity to make design considerations for a number of functions. In the following report there is an in-depth analytical approach to lighting designs for each of those spaces. Each space describes the design criteria, themes, equipment, and layouts used for the design. Following initial design considerations is a detailed report of the performance of each space. The spaces were analyzed for performance requirements that were set at the beginning of the design including: illumination, aesthetics and power density requirements. An analysis of the performance is found at the end of each design summary.

The new design required a revision to the circuiting information and lighting controls which is detailed in the report. The lighting design also includes plans for controls which drove the circuiting plan and can be found in the electrical depth section of this report. Also, after studying the layout of distribution panels it was determined that some panels could be consolidated to reduce installation and material costs which is found in the electrical depth section of the report.

The next two sections are an acoustical and cost analysis study. The acoustical study was driven by an architectural change needed to accommodate the lighting design, and the cost analysis study is also related to the lighting design. The cost analysis compares the existing design of the typical lobby lighting to the design I have studied and analyzed in this report.

Finally, there is an end discussion about the designs plan throughout this report. The discussion describes the difficulties and successes reach through designing process and documentation. Overall these designs were determined to be fitting although the cost of some items was higher than anticipated.