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Lighting/Electrical Option

James J. Whalen Center for Music, Ithaca, NY

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Photo courtesy of HOLT Architects, P.C.

Electrical Systems Existing Conditions and Building Load Summary Report October 29, 2003

Executive Summary

This report evaluates the designed electrical system for the Whalen Center. Through analysis of electrical floor plans, riser diagrams, and specifications, a clear overview of the system was developed. It is noted that this facility connects to a campus regulated electric supply of 5kV and utilizes electricity at both 480/277V and 208/120V within the facility. To clearly illustrate system layout, a one line diagram was created by simplifying the riser diagram E401, part of the contract documents. A 200kW natural gas emergency generator provides power to the emergency loads isolated to a single distribution panel, EDP-1. The system also consists of a wide variety of fluorescent, HID, and incandescent lighting loads operating at 208/120V. The system's largest loads are from mechanical equipment such as AHU's, chillers, and cooling towers operating at 480/277V. A full building electric load calculation was completed and the resulting load was compared to the ratings of the primary switchgear and primary transformers. Finally, it is noted that there could be a serious problem with the sizing of the fused disconnects within the primary switchgear.