
EXECUTIVE SUMMARY

Technical Report 2, Electrical System Existing Conditions and Building Load Summary, examines the existing lighting system of the Maryland Transportation Authority Police Training Facility. The report looks at the power distribution system and the communication systems of the building. Descriptions of the characteristics of the building systems and a summary of the total building electrical system are presented in the report that follows and were developed based on an exploration of the design drawings and specifications. Also included in the report are overcorrect devices, transformers, and lighting and mechanical loading. An appendix provides items such single line diagrams, tables, and rate schedules that supplement the report.

The Maryland Transportation Authority Police Training Facility uses a radial type electrical distribution system to supply the grounds with 480Y/277V, 3-phase power. Baltimore Gas & Electric, the electrical utility, supplies power at 13.8 kV to the distribution transformer located on the site. MdTA has three transformers to step-down from 480/277V to 208/120V. These transformers are located in the electrical rooms as defined in Table 1.

Loads on the distribution system are comprised mainly of lighting and mechanical loads. A majority of the lighting loads are powered by 277V single-phase power, however, some are power by 120V single-phase due to unique requirements. Appendix A contains the Luminaire Schedule, which details the lighting loads. Mechanical loads consist mostly of air handling units requiring 3-phase, 460V power. All mechanical loads are detailed in Table 4. Additional loads due to plumbing and architectural requirements are detailed in Table 5. Of these, the elevator is most notable, drawing 302 KVA at 460V, 3-phase power.

Communication systems are provided throughout the building. Telephone service raceways are provided from a main board connected to external telephone lines. A raceway system is also provided for computer networking. Access control systems, fire alarm systems, closed circuit television, and a TV antenna system are also discussed.