PART 1 - GENERAL

1.1 RELATED SECTIONS:

Refer to Division 7 for Thermal and Moisture Protection requirements.

Refer to Division 23 for Mechanical requirements.

Refer to Division 16 for Electrical requirements.

1.2 SCOPE OF SECTION:

This section contains the requirements for lightning protection system (LPS) for the protection of University structures from direct lightning strikes.

This is an optional system that should be evaluated for inclusion in new construction or renovation projects. Evaluation shall be made in accordance with guidelines set forth in the latest edition of NFPA 780, Standard for the Installation of Lightning Protection systems, Annex L, Lightning Risk Assessment. Submit copies of the evaluation for review and approval by East Carolina University.

1.3 QUALITY ASSURANCE:

A. Installer Qualifications: Certified by UL as a Master Installer/Designer, trained and approved for installation of units required for this Project.

B. System Certificate:
   1. UL Master Label.
   2. UL Master Label Recertification for renovations and expansions. If existing structure does not have a UL Master Label, provide “Letter of Compliance”.

PART 2 - PRODUCTS

2.1 GENERAL:

A. The LPS shall be comprised of air terminals, down conductors, ground terminals, counterpoised ground conductor, interconnecting conductors, arresters and other connectors or fittings required to complete the system. The lightning protection ground components shall be connected to the electrical service ground. System design shall be in accordance with the latest edition of the following:

   a. NFPA 70, National Electrical Code
   b. NFPA 780, Standard for the Installation of Lightning Protection Systems
   c. LPI-175, Lightning Protection Institute (LPI), Standard of Practice
   d. UL 96A, Underwriters Laboratories, Installation Requirements for Lightning Protection Systems.
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B. System Conductors and Down Conductors: sized per classification required in NFPA and for Master UL Label.
C. Counterpoise System Ground: Copper, provide when required by NFPA and for Master UL Label.
D. The installer/certifier shall prepare and provide to the university, a complete Inspection Guide and forms for conducting all inspections and testing of the lightning protection system as noted in the Annex to NFPA 780, Inspection and Maintenance of Lightning Protection Systems.
E. The installer/certifier shall instruct university personnel how to properly inspect, test, and maintain the lightning protection system as noted in the Annex to NFPA 780, Inspection and Maintenance of Lightning Protection Systems.

PART 3 - EXECUTION

3.1 INSTALLATION:

A. Provide lightning protection components and systems according to UL 96A and NFPA 780 on all new facilities, renovated facilities, and where roof replacements require removing or modifying existing lightning protection systems.
B. Cable Connections: Use crimped or bolted connections for all conductor splices and connections between conductors and other components. Use exothermic-welded connections in underground portions of the system.
C. Air Terminals on Membrane Roofing: Comply with roofing membrane and adhesive manufacturer’s written instructions.
D. Bond the extremities of vertical metal bodies exceeding 60 feet in length to the lightning protection components.
E. Provide inspection-wells as well as test and disconnect points as needed to insure adequate access for testing and inspection of the lightning protection system as noted in the Inspection and Maintenance of Lighting Protection Systems Annex of NFPA 780.

3.2 CORROSION PROTECTION:

A. Do not combine materials that can form an electrolytic couple that will accelerate corrosion in the presence of moisture unless moisture is permanently excluded from junction of such materials.
B. Use conductors with protective coatings where conditions cause deterioration or corrosion of conductors.

3.3 FIELD QUALITY CONTROL:

A. UL Inspection: Meet requirements to obtain a UL Master Label for system. Provide UL Master Label in accordance with UL 96A with project closeout documents.

END OF SECTION