

## SECTION 264113 - LIGHTNING PROTECTION FOR STRUCTURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes the following:
  - 1. Air terminals and interconnecting conductors
  - 2. Grounding and bonding for lightning protection

#### 1.3 REFERENCES

- A. NFPA 780 – Lightning Protection Code
- B. UL 96 – Lightning Protection Components
- C. UL 96A – Installation Requirements for Lightning Protection Systems

#### 1.4 SYSTEM DESCRIPTION

- A. Description of Systems:
  - 1. A Lightning protection System shall be provided and installed on the structures even though not shown on drawings, by experienced installers in compliance with provisions of Code for Lightning Protection systems as adopted by the National Fire Protection Association and Underwriters' Laboratories. All equipment to that result shall be included whether or not specifically called for herein. A U.L. Master Label for the system shall be required.

#### 1.5 SUBMITTALS FOR REVIEW

- A. Shop Drawings: Indicate layout of air terminals, grounding electrodes, and bonding connections to structure and other metal objects. Include terminal, electrode, and conductor sizes, and connection and termination details.
- B. Product Data: Provide dimensions and materials of each component, and include indication of listing in accordance with UL 96.

1.6 SUBMITTALS FOR INFORMATION

- A. Submit certificate of compliance from Underwriter's Laboratories.

1.7 PROJECT CLOSEOUT SUBMITTALS

- A. Record actual locations of air terminals, grounding electrodes, bonding connections, and routing of system conductors in project records documents.

1.8 QUALITY ASSURANCE

- A. Perform Work in accordance with NFPA 780.
- B. Perform Work in accordance with UL 96A and provide Master Label.

1.9 QUALIFICATIONS

- A. Manufacturer: Company specializing in lightning protection equipment with minimum three years' experience.
- B. Installer: Authorized installer of manufacturer with minimum three years' experience.

1.10 REGULATORY REQUIREMENTS

- A. Product Listing: UL 96

1.11 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

1.12 COORDINATION

- A. Coordinate work with roofing and exterior and interior finish installations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Thompson Lightning Protection, Inc.
- B. Heary Brothers Lightning Protection
- C. Independent Protection Company

D. Harger

2.2 AIR TERMINALS

- A. Air Terminals shall be solid (aluminum or copper) as required to match roof conductors, and shall have proper base support for surface on which they are attached, and shall be securely anchored to this surface. Terminals shall project a minimum of 10" above top of object to which attached.

2.3 CONDUCTORS

- A. Roof conductors shall consist of (aluminum or copper) complying with the weight and construction requirements of the Code, and shall be coursed to interconnect with air terminals, and in general, provide a two-way minimum path to ground. The angle of any turn shall not exceed 90 degrees, and shall provide an approximately horizontal or downward course. Down conductors shall be copper, and shall be provided where shown installed in PVC conduit and hidden within the structure. Radius of bends shall not be less than 8 inches. Roof conductor material shall match and/or be compatible with roof flashing material.

2.4 FASTENER

- A. Conductor fasteners shall be of the same material as the conductor, having ample strength to support conductor. Where fasteners are to be mounted in masonry or structural work, they shall be furnished to the Masonry or Structural Contractor so they may be installed during construction of the project.

2.5 GROUND CONNECTIONS

- A. Ground connections shall be made in accordance with requirements of all applicable codes. Ground rods shall be placed in a minimum of two (2) feet from building foundations. In addition to above artificial grounds, one down conductor of each two-path system shall be connected to water piping system with approved water pipe type strap connector. All ground rods shall be 5/8" x 20' copper-clad type.

2.6 INSTALLATION

- A. Installation shall be made in an inconspicuous manner with conductors coursed to conceal equipment as much as possible. Down conductors shall be concealed within structure, and shall be run in 1" PVC conduit. All metallic equipment within 6 feet of any lightning conductor shall be bonded to conductor. System shall also be tied to the main service electrical ground.

2.7 EQUIPMENT

- A. Equipment shall be as manufactured by Thompson Lightning Protection, Inc.; Independent Protection Company, Inc.; Heary Bros. Lightning Protection or Harger (premium lines).

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install in accordance with NFPA 780 and UL 96A.
- B. Connect conductors using mechanical connectors and exothermic welding process. Protect adjacent construction elements and finishes from damage.
- C. Bond exterior metal bodies on building to lightning protection system.

3.2 FIELD QUALITY CONTROL

- A. Obtain the services of Underwriters Laboratories, Inc. to provide inspection and labeling of the lightning protection system in accordance with UL 96A.

END OF SECTION 264113