



**NOTICE TO ALL BIDDERS**

**ADDENDUM NO. 5**

**TO**

**THE INVITATION TO BID FOR THE**

**TUCSON AIRPORT AUTHORITY PROJECT**

**20117966 Install PAPI's at Ryan Airfield**

**May 10, 2021**

In accordance with the Bid Documents, Bidders on the above-referenced project are hereby notified that the following Addendum, dated May 10, 2021 shall be made a part of the Bid Documents. The Bidder shall acknowledge receipt of this addendum on the Bid Form.

**Bids are due by 2:00 p.m. Local Tucson Time, Friday May 14, 2021 at the TAA Administration Building, 7250 S. Tucson Boulevard, Suite 300, Tucson AZ, 85756**

**Changes to Contract Documents:**

1. Contract Specifications, F. BID FORM: **REMOVE** Bid Form, pages 48-50 and **REPLACE** with attached pages 48-50. The Date/Time have been updated.
2. Contract Specifications, F. BID SCHEDULES: **REMOVE** Bid Schedule, page BS-1 and **REPLACE** with attached page BS-1. The description in Bid Line Items L-109-7.1 and L-109-7.2 have been updated.
3. Technical Specifications, **REMOVE** Technical Specification L-109 *Airport Transformer Vault and Vault Equipment* in its entirety and **REPLACE** with the attached, revised Technical Specification L-109 *Airport Transformer Vault and Vault Equipment*.
4. Plan Sheet E4.1 Existing Airfield Lighting Vault Plan, **DELETE** Construction Notes 1 and 2, and **REPLACE** with the following:
  - ① Install New Owner Provided PAPI 6R 4KW CCR with integrated S1 Cutout – Circuit EMV-6,8 (Mounted Below Existing CCR)
  - ② Install New Owner Provided PAPI 6L/24R 7.5KW CCR with integrated S1 Cutout – Circuit EMV-10,12 (Mounted Below Existing CCR)

## BID FORM

PLACE: TUCSON AIRPORT AUTHORITY  
Tucson International Airport Terminal  
7250 S. Tucson Blvd., Suite 300  
Tucson, Arizona 85756

DATE/TIME: 2:00 p.m. Local Tucson Time, Friday May 14, 2021

BID OF: \_\_\_\_\_  
(Hereinafter called the "Bidder")

DOING BUSINESS AS: \_\_\_\_\_  
Corporation Partnership Individual

TO: Tucson Airport Authority ("TAA" or "Owner")

PROJECT: 20117966 Install PAPI's at Ryan Airfield

I (We), the undersigned, propose to provide all construction and services required by the Bid Documents or reasonably inferable therefrom to produce the results intended, whether completed or partially completed, and including all other administration, supervision, labor, materials, equipment, supplies, incidentals, facilities, requirements, and services to be provided by Contractor to fulfill Contractor's obligations under the Contract Documents, hereinafter called the "Work."

I (We) further declare that we have carefully read and examined all Bid Documents and all portions of the Contract Documents, including the Drawings and Specifications, and that we have made personal examination of the property, and that we have a full understanding of the exact scope of the Work.

I (We) further declare that in case of a joint bid each party thereto certifies, as to his/her own organization, that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor. The Bid as stated herein includes the cost of insurance and bonds as required by the Contract Documents. I (We) agree to provide the bonds and insurance required under the Contract Documents.

I (We) further declare that we have not in the preparation or submission of this Bid, or with regard to any act of performance under the Contract Documents, entered into any contract, combination, conspiracy or other act in restraint of trade or commerce which is unlawful under the laws of the State of Arizona.

I (We) further acknowledge receipt of the following Addenda:

|              |      |
|--------------|------|
| Addendum No. | Date |
| Addendum No. | Date |
| Addendum No. | Date |
| Addendum No. | Date |

In submitting this Bid, I (we) agree to the following:

1. To execute the Construction Services Agreement for the Work for the price stated below, in the form submitted in the Bid Documents, as that form is supplemented and amended by the Contract Documents, within fourteen (14) Calendar Days of receipt of notification of acceptance of this Bid.
2. To accomplish the Work in strict accordance with the Contract Documents and all applicable laws, statutes, ordinances, codes and regulations, and to submit herewith the attached Non-Collusion Affidavit.
3. To commence Work on or before the date specified in the "Notice to Proceed," and to complete the Work within the time set forth in the Contract Documents.
4. To complete the Work for the price(s) shown below:

BASE BID (\_\_\_\_\_)

\_\_\_\_\_ (\$\_\_\_\_\_)  
In Words In numbers

**TOTAL AGGREGATE BID (Base Bid)**

\_\_\_\_\_ (\$\_\_\_\_\_)  
**In Words In numbers**

Enclosed is a Bid Bond as required in the Instructions to Bidders consisting of a \_\_\_\_\_ in the amount of \_\_\_\_\_ dollars (\$\_\_\_\_\_) which is not less than ten percent (10%) of the Total Aggregate Bid.

In accordance with the terms and conditions set forth in the Instruction to Bidders, the undersigned Bidder understands and agrees that the Bid Bond can be forfeited to TAA in the event the Bidder fails to deliver the required bonds and insurance and otherwise fails to execute the Construction Services Agreement for the Project within fourteen (14) Calendar Days of receipt of notification of TAA's acceptance of this Bid.

The undersigned Bidder represents to TAA the Bidder's Representations set forth in Section II of the Instructions to Bidders.

Bidder encloses with his/her/its Bid, the following documents: (1) Bid Form including Bid Schedules; (2) Noncollusion Affidavit; (3) Bid Bond; (4) Interest List Form; (5) Contractor's Qualification Statement, (6) Statement of Proposed DBE Utilization Form, (7) Evidence of "good faith efforts" if DBE aspirational goal of 7% is not met, and (8) a written explanation setting forth the basis for an exemption from licensing requirements, if claimed. ANY EXCEPTIONS TO THE ABOVE LIST MUST BE IDENTIFIED IN WRITING: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Official Name of Bidder)  
(If Bidder is a corporation)

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Bidder's Telephone Number: \_\_\_\_\_

Bidder's Email Address: \_\_\_\_\_

Bidder's Business Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

STATE OF ARIZONA                    )  
                                                  ) ss.  
County of Pima                        )

SUBSCRIBED AND SWORN TO before me this \_\_\_\_\_ day  
of \_\_\_\_\_, by \_\_\_\_\_ in his/her capacity as \_\_\_\_\_.

Notary Public:

My commission expires:

\_\_\_\_\_

**BID SCHEDULE**

20117966 Install PAPIs at Ryan Airfield

| Item #                              | Item Description                                                                                                             | Units | Unit Price | QTY  | Total Price |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------|------------|------|-------------|
| <b>CIVIL</b>                        |                                                                                                                              |       |            |      |             |
| M-100-4.1                           | Mobilization                                                                                                                 | LS    |            | 1    |             |
| GTP-20.05.1                         | Airfield Safety and Security                                                                                                 | LS    |            | 1    |             |
| T-901-5.1                           | Seeding                                                                                                                      | SY    |            | 44   |             |
| <b>ELECTRICAL</b>                   |                                                                                                                              |       |            |      |             |
| L-108-5.1                           | L-824, Type C, 2/C #8 AWG, 5kV Cable                                                                                         | LF    |            | 8056 |             |
| L-109-7.1                           | Install Owner Provided Constant Current Regulator Ferroresonant 4 KW, 3-Step (4.8A - 6.6A), Tested and Programmed Complete   | EA    |            | 1    |             |
| L-109-7.2                           | Install Owner Provided Constant Current Regulator Ferroresonant 7.5 KW, 3-Step (4.8A - 6.6A), Tested and Programmed Complete | EA    |            | 1    |             |
| L-110-5.1                           | Single-way (1) - 2" Conduit, Slurry Encased                                                                                  | LF    |            | 735  |             |
| L-110-5.2                           | Multiple-way (3) - 2" Conduit, Slurry Encased                                                                                | LF    |            | 3585 |             |
| L-110-5.3                           | Multiple-way (3) - 2" Conduit, Directional Bore                                                                              | LF    |            | 860  |             |
| L-125-5.1                           | New L-867E (24" Dia) Junction Can with Blank Cover                                                                           | EA    |            | 13   |             |
| L-125-5.2                           | Install Owner Provided 4-Box PAPI L-880B System on New Concrete Foundations                                                  | EA    |            | 3    |             |
|                                     |                                                                                                                              |       |            |      |             |
|                                     |                                                                                                                              |       |            |      |             |
|                                     |                                                                                                                              |       |            |      |             |
|                                     |                                                                                                                              |       |            |      |             |
| TOTAL BASE BID AMOUNT (IN NUMBERS): |                                                                                                                              |       |            |      |             |
| Permit Fees                         |                                                                                                                              |       |            |      |             |
| TOTAL BASE BID AMOUNT (IN WORDS):   |                                                                                                                              |       |            |      |             |

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## **ITEM L-109 Airport Transformer Vault and Vault Equipment**

### **DESCRIPTION**

**109-1.1** This item shall consist of constructing airport transformer vault modifications per these specifications and per the design and dimensions shown in the plans. Included as a separate part under this item or as a separate item where an existing vault is to be used shall be the furnishing of all vault equipment, wiring, electrical buses, cable, conduit, potheads, and grounding systems. This work shall also include the painting of equipment and conduit; the marking and labeling of equipment and the labeling or tagging of wires; the testing of the installation; and the furnishing of all incidentals necessary to place it in operating condition as a completed unit to the satisfaction of the RPR.

#### **109-1.2 Installation of Owner Provided Ferroresonant L-828 CCR**

This item shall consist of installing the Owner provided L-828 constant current regulator (CCR) in accordance with these specifications.

This item shall also include all circuit breakers, wire and cable connections, the furnishing and installing of all necessary conduits and fittings and all necessary mounting structures. It shall also include the testing of the installation and all incidentals necessary to place the Owner provided CCRs in operation as completed units to the satisfaction of the Owner / Engineer.

### **EQUIPMENT AND MATERIALS**

#### **109-2.1 General.**

**a.** Airport lighting equipment and materials covered by advisory circulars (AC) shall be certified in AC 150/5345-53, Airport Lighting Equipment Certification Program (ALECP) and listed in the ALECP Addendum.

**b.** All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

**c.** Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

**d.** All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise, and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The

Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be provided in electronic pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

## **CONSTRUCTION OF VAULT AND PREFABRICATED METAL HOUSING**

**109-3.1 Electrical vault building.** Not Used.

**109-3.2 Concrete.** Not Used.

**109-3.3 Precast concrete structures.** Not Used.

**109-3.4 Reinforcing steel.** Not Used

**109-3.5 Brick.** Not Used..

**109-3.6 Rigid steel conduit.** Rigid steel conduit and fittings shall be per Underwriters Laboratories Standards 6 and 514B.

**109-3.7 Plastic Conduit and fittings.** Plastic Conduit and fittings shall conform to the requirements of UL-651 and UL-654 schedule 40 polyvinyl chloride (PVC) suitable for use above or below ground.

**109-3.8 Lighting.** Not Used.

**109-3.9 Outlets.** Not Used.

**109-3.10 Switches.** Not Used.

**109-3.11 Paint.** Not Used.

**109-3.12 Ground bus.** Not Used.

**109-3.13 Square duct.** Not Used.

**109-3.14 Ground rods.** Ground rods shall be in accordance with Item L-108.

**109-3.15 Vault prefabricated metal housing.** Not Used.

**109-3.16 FAA-approved equipment.** Certain items of airport lighting equipment installed in vaults are covered by individual ACs listed below:

AC 150/5345-3                      Specification for L-821, Panels for Remote Control of Airport Lighting

AC 150/5345-5                      Circuit Selector Switch

AC 150/5345-7                      Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits

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|                |                                                                                                          |
|----------------|----------------------------------------------------------------------------------------------------------|
| AC 150/5345-10 | Specification for Constant Current Regulators and Regulator Monitors                                     |
| AC 150/5345-13 | Specification for L-841 Auxiliary Relay Cabinet Assembly for Pilot Control of Airport Lighting Circuits. |
| AC 150/5345-49 | Specification for L-854, Radio Control Equipment                                                         |
| AC 150/5345-56 | Specification for L-890 Airport Lighting Control and Monitoring System (ALCMS)                           |

**109-3.17 Other electrical equipment.** Distribution transformers, oil switches, cutouts, relays, terminal blocks, transfer relays, circuit breakers, and all other regularly used commercial items of electrical equipment not covered by FAA equipment specifications and ACs shall conform to the applicable rulings and standards of the Institute of Electrical and Electronic Engineers (IEEE) or the National Electrical Manufacturers Association (NEMA). When specified, test reports from a testing laboratory indicating that the equipment meets the specifications shall be supplied. In all cases, equipment shall be new and a first-grade product. This equipment shall be supplied in the quantities required for the specific project and shall incorporate the electrical and mechanical characteristics specified in the proposal and plans. Equipment selected and installed by the Contractor shall maintain the interrupting current rating of the existing systems or specified rating whichever is greater.

**109-3.18 Wire.** Wire (in conduit) rated up to 5,000 volts shall be per AC 150/5345-7, Specification for L-824 Underground Electrical Cables for Airport Lighting Circuits. For ratings up to 600 volts, moisture and heat resistant thermoplastic wire conforming to Commercial Item Description A-A-59544A Type THWN-2 shall be used. The wires shall be of the type, size, number of conductors, and voltage shown in the plans or in the proposal.

**a. Control circuits.** Unless otherwise indicated on the plans, wire shall be not less than No. 12 American wire gauge (AWG) and shall be insulated for 600 volts. If telephone control cable is specified, No. 19 AWG telephone cable per ANSI/Insulated Cable Engineers Association (ICEA) S-85-625 specifications shall be used.

**b. Power circuits.**

- (1) 600 volts maximum – Wire shall be No. 6 AWG or larger and insulated for at least 600 volts.
- (2) 3,000 volts maximum – Wire shall be No. 6 AWG or larger and insulated for at least 3,000 volts.
- (3) Over 3,000 volts-Wire shall be No. 6 AWG or larger and insulated for at least the circuit voltage.

**109-3.19 Short circuit / coordination / device evaluation / arc flash analysis.** Not Used.

## **CONSTRUCTION METHODS**

### **CONSTRUCTION OF VAULT AND PREFABRICATED METAL HOUSING**

**109-4.1 General.** Not Used.

**109-4.2 Foundation and walls.** Not Used.

## **INSTALLATION OF EQUIPMENT IN VAULT OR**

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## **PREFABRICATED METAL HOUSING**

**109-5.1 General.** The Contractor shall furnish, install, and connect all equipment, equipment accessories, conduit, cables, wires, buses, grounds, and support necessary to ensure a complete and operable electrical distribution center for the airport lighting system as specified herein and shown in the plans. When specified, an emergency power supply and transfer switch shall be provided and installed.

The equipment installation and mounting shall comply with the requirements of the National Electrical Code and local code agency having jurisdiction. All electrical work shall comply with the NEC and local code agency having jurisdiction including the separation of under 600V work from 5,000V work."

**109-5.2 Power supply equipment.** Transformers, regulators, booster transformers, and other power supply equipment items shall be furnished and installed at the location shown in the plans or as directed by the RPR. The power supply equipment shall be set on steel "H" sections, "I" beams, channels, or concrete blocks to provide a minimum space of 1-1/2 inch (38 mm) between the equipment and the floor. The equipment shall be placed so as not to obstruct the oil-sampling plugs of the oil-filled units; and nameplates shall, so far as possible, not be obscured.

If specified in the plans and specifications, equipment for an alternate power source or an emergency power generator shall be furnished and installed. The alternate power supply installation shall include all equipment, accessories, an automatic changeover switch, and all necessary wiring and connections. The emergency power generator set shall be the size and type specified.

**109-5.3 Switchgear and panels.** Oil switches, fused cutouts, relays, transfer switches, panels, panel boards, and other similar items shall be furnished and installed at the location shown in the plans or as directed by the RPR. Wall or ceiling mounted items shall be attached to the wall or ceiling with galvanized bolts of not less than 3/8-inch (9 mm) diameter engaging metal expansion shields or anchors in masonry or concrete vaults.

**109-5.4 Duct and conduit.** The Contractor shall furnish and install square-type exposed metallic ducts with hinged covers for the control circuits in the vault. These shall be mounted along the walls behind all floor-mounted equipment and immediately below all wall-mounted equipment. The hinged covers shall be placed to open from the front side with the hinges at the front bottom.

Wall brackets for square ducts shall be installed at all joints 2 feet (60 cm) or more apart with intermediate brackets as specified. Conduit shall be used between square ducts and equipment or between different items of equipment when the equipment is designed for conduit connection. When the equipment is not designed for conduit connection, conductors shall enter the square-type control duct through insulating bushings in the duct or on the conduit risers.

**109-5.5 Wiring and connections.** The Contractor shall make all necessary electrical connections in the vault per the wiring diagrams furnished and as directed by the RPR. In wiring to the terminal blocks, the Contractor shall leave sufficient extra length on each control lead to make future changes in connections at the terminal block. This shall be accomplished by running each control lead the longest way around the box to the proper terminal. Leads shall be neatly laced in place.

**109-5.6 Marking and labeling.** All equipment, control wires, terminal blocks, etc., shall be tagged, marked, or labeled as specified below:

**a. Wire identification.** The Contractor shall furnish and install self-sticking wire labels or identifying tags on all control wires at the point where they connect to the control equipment or to the terminal blocks. Wire labels, if used, shall be of the self-sticking preprinted type and of the manufacturer's recommended size for the wire involved. Identification -markings designated in the plans shall be followed. Tags, if used, shall be of fiber not less than 3/4 inch (19 mm) in diameter and not less than 1/32 inch (1 mm) thick. Identification markings designated in the plans shall be stamped on tags by means of small tool dies. Each tag shall be securely tied to the proper wire by a nonmetallic cord.

**b. Labels.** The Contractor shall stencil identifying labels on the cases of regulators, breakers, and distribution and control relay cases with white oil paint as designated by the RPR. The letters and numerals shall be not less than one inch (25 mm) in height and shall be of proportionate width. The Contractor shall also mark the correct circuit designations per the wiring diagram on the terminal marking strips, which are a part of each terminal block.

## **METHOD OF MEASUREMENT**

**109-6.1 New Owner Provided L-828 CCR Installed Complete.** The quantity of constant current regulators (CCRs) to be paid for under this item shall consist of the installation of the new owner provided ferroresonant CCRs including the circuit breakers and 240V branch circuits required to power the CCRs; stacking kits to install above existing CCRs, and all work in place and accepted as complete units. Contractor shall provide and install raceways and communications cables for extension of both ALCMS channels to new regulators. Contractor shall also provide and install all raceways and cables between CCRs and equipment as indicated in construction drawings.

The installation of control and power cabling and cable terminations shall be incidental to the respective CCR items.

**109-6-2 ALCMS MODIFICATIONS.** The existing ALCMS is manufactured by Crouse Hinds. Contractor shall be on site during ALCMS software, control, and screen graphics modifications to assist and/or make any corrections required to ensure proper operation of system to the satisfaction of the Owner. This shall be incidental to the installation of vault and field equipment. No separate payment shall be made.

## **BASIS OF PAYMENT**

**109-7.1** Payment will be made at the contract unit price for each completed and accepted vault or prefabricated metal housing equipment installation. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

|                |                                                                                                                                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Item L-109-7.1 | Install Owner Provided Constant Current Regulator Ferroresonant 4 KW, 3-Step (4.8A - 6.6A), Tested and Programmed Complete - per each |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------|

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Item L-109-7.2      Install Owner Provided Constant Current Regulator Ferroresonant 7.5 KW, 3-Step (4.8A - 6.6A), Tested and Programmed Complete - per each

## REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

### Advisory Circulars (AC)

AC 150/5340-30      Design and Installation Details for Airport Visual Aids  
AC 150/5345-3      Specification for L-821, Panels for Remote Control of Airport Lighting  
AC 150/5345-5      Circuit Selector Switch  
AC 150/5345-7      Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits  
AC 150/5345-10      Specification for Constant Current Regulators and Regulator Monitors  
AC 150/5345-13      Specification for L-841 Auxiliary Relay Cabinet Assembly for Pilot Control of Airport Lighting Circuits  
AC 150/5345-49      Specification L-854, Radio Control Equipment  
AC 150/5345-53      Airport Lighting Equipment Certification Program

### American National Standards Institute / Insulated Cable Engineers Association (ANSI/ICEA)

ANSI/ICEA S-85-625      Standard for Telecommunications Cable Aircore, Polyolefin Insulated, Copper Conductor Technical Requirements

### ASTM International (ASTM)

ASTM A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement  
ASTM C62      Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)  
ASTM C90      Standard Specification for Loadbearing Concrete Masonry Units  
ASTM D2823      Standard Specification for Asphalt Roof Coatings, Asbestos Containing  
ASTM D4479      Standard Specification for Asphalt Roof Coatings – Asbestos-Free

### Commercial Item Description (CID)

A-A 59544      Cable and Wire, Electrical (Power, Fixed Installation)

### Institute of Electrical and Electronic Engineers (IEEE)

IEEE 1584      Guide for Performing Arc-Flash Hazard Calculations

### Master Painter's Institute (MPI)

MPI Reference #9      Alkyd, Exterior, Gloss (MPI Gloss Level 6)

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Underwriters Laboratories (UL)

|                  |                                                               |
|------------------|---------------------------------------------------------------|
| UL Standard 6    | Electrical Rigid Metal Conduit – Steel                        |
| UL Standard 514B | Conduit, Tubing, and Cable Fittings                           |
| UL Standard 514C | Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers      |
| UL Standard 651  | Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings |
| UL Standard 651A | Type EB and A Rigid PVC Conduit and HDPE Conduit              |

National Fire Protection Association (NFPA)

|          |                                                               |
|----------|---------------------------------------------------------------|
| NFPA-70  | National Electrical Code (NEC)                                |
| NFPA-70E | Standard for Electrical Safety in the Workplace               |
| NFPA-780 | Standard for the Installation of Lightning Protection Systems |

**END OF ITEM L-109**

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