E.3.2 ELECTRICAL PENETRATIONS

E.3.2.1 CONCRETE OVER METAL DECK

- **2 HR.**

1. **CABLE TRAY THROUGH CONCRETE OVER METAL DECKING (2 HR.)**
   - INSTALL PER UL SYSTEM C-AJ-6017
   - USE HILTI FS-ONE MAX FIRESTOP SEALANT
   - E.3.2
   - ELECTRICAL TRAY
   - MAX. 23" X 4-1/2"
   - MIN. 4-1/2" (ALUMINUM OR STEEL OPEN LADDER)

2. **ELECTRICAL BUSWAY THROUGH CONCRETE OVER METAL DECKING (2-HR.)**
   - INSTALL PER UL SYSTEM C-AJ-6042
   - USE HILTI CFS-BL FIRESTOP BLOCK
   - ELECTRICAL BUSWAY
   - MAX. 26" X 6"

3. **ELECTRICAL BUSWAY THROUGH CONCRETE OVER METAL DECKING (2-HR.)**
   - INSTALL PER UL SYSTEM C-AJ-8143
   - USE HILTI FS-ONE MAX FIRESTOP SEALANT
   - E.3.2
   - CABLE TRAY
   - MAX. 36" X 6" (ALUMINUM OR STEEL OPEN LADDER)

4. **MULTIPLE PENETRATIONS THROUGH CONCRETE OVER METAL DECKING (2-HR.)**
   - INSTALL PER UL SYSTEM C-AJ-6042
   - USE HILTI CFS-BL FIRESTOP BLOCK
   - MIN. 4-1/2"

CABLE BUNDLE CONSISTS OF:

- **TYPE**
- **MAX.**

- **TELEPHONE CABLE WITH PVC JACKET**
  - 300 PAIR
  - NO. 24 AWG

- **METAL-CLAD CABLE**
  - 3/C NO. 12 AWG

- **SINGLE CONDUCTOR POWER CABLE WITH PVC JACKET**
  - 750 KCMIL

- **POWER CABLE WITH PVC JACKET**
  - 7/C NO. 12 AWG

- **FIBER OPTIC CABLE (24 FIBER) WITH PVC JACKET**
  - 1/2" DIA.

**NOTES:**

1. Refer to the following specifications for firestopping:
   - 07 84 00 Firestopping
   - 07 84 13 Penetration Firestopping
   - 22 00 00 Plumbing
   - 23 00 00 HVAC
   - 26 00 00 Electrical
   - 27 06 37 Communication
   - Always refer to the UL system details for complete system requirements. If field conditions do not match requirements of details, approved alternate details shall be utilized. Design requirements, field conditions, and dimensions need to be verified for compliance with the details, including but not limited to the following:
     - Fire Rating (F-Rating)
     - Temperature Rating (T-Rating)
     - Leakage Rating (L-Rating)
     - Water Rating (W-Rating)
     - Annular Space
     - Percent Fill
     - Movement
     - Type and Finish of fire-resistive construction

2. Details shown are typical details, containing general information only. Always refer to the UL system details for complete system requirements. If field conditions do not match requirements of details, approved alternate details shall be utilized. Design requirements, field conditions, and dimensions need to be verified for compliance with the details, including but not limited to the following:

3. If alternate details matching the field conditions are not available, manufacturer’s engineering judgment drawings are acceptable. Details shown shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.

4. References:
   - 2013 Underwriter’s Laboratory Fire Resistance Directory, Volumes 1 & 2
   - NFPA 70: National Electric Code
   - All governing local and regional building codes

5. Firestop System installation must meet requirements of ASTM E-142 (UL 2077) tested assemblies that provide a fire rating equal to the construction being penetrated. Firestop Systems shall be prominently identified with a UL Firestop Label equipped with a QR code with the following information:
   - Warning: Do Not Disturb
   - Through Penetration Firestop System
   - UL System #
   - Hourly Rating (F-Rating)
   - Installation Date
   - Contractor’s Name

6. For outlet boxes requiring protection, use only Wall Opening Protective Materials, category CLIV as classified by Underwriter’s Laboratories, Fire Resistance Directory (Volume 1.)

7. For outlet boxes requiring protection, use only Wall Opening Protective Materials, category CLIV as classified by Underwriter’s Laboratories, Fire Resistance Directory (Volume 1.)

8. For outlet boxes requiring protection, use only Wall Opening Protective Materials, category CLIV as classified by Underwriter’s Laboratories, Fire Resistance Directory (Volume 1.)

9. For outlet boxes requiring protection, use only Wall Opening Protective Materials, category CLIV as classified by Underwriter’s Laboratories, Fire Resistance Directory (Volume 1.)
2. Details shown are typical details, containing general information only. Always refer to the N.F.L. system detail for complete system requirements. If field conditions do not match requirements of details, approved alternate details shall be utilized. Design requirements, field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:

- Type and thickness of fire-rated construction.
- Type of firestop device and its installation.
- Firestop System installation must meet requirements of ASTM E-814 (UL 1479) tested assemblies that provide a fire rating equal to that of construction being penetrated.
- If Type A Firestop is utilized, a Type A Firestop Label must be utilized with a QR code with the following information:
  - Warning - Do Not Disturb
  - Through-Penetration Firestop System
  - UL System #
  - Product(s) used
  - Hourly Rating (F-Rating)
  - Installation Date

- For steel bases requiring protection, use only Wall Opening Protective Materials, category C-11, as classified by Underwriters’ Laboratories, Fire Resistance Directory (Volume 1).

Notes to designer (delete this note after reading and replace with title block information):