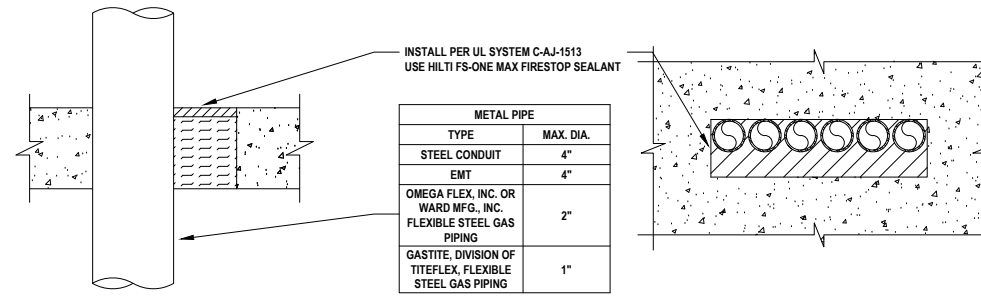
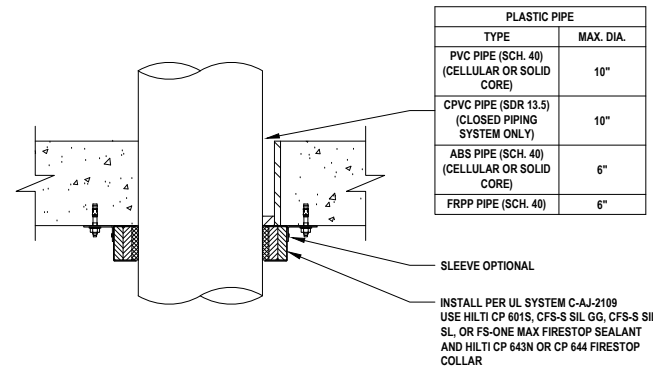


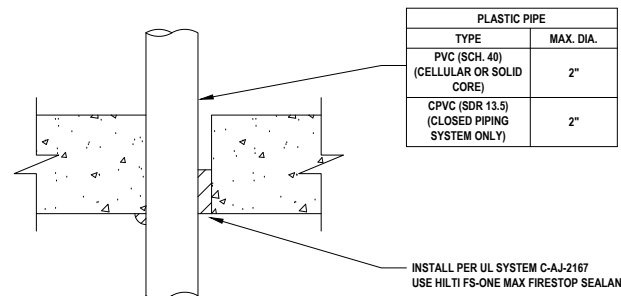
1 METAL PIPE THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE



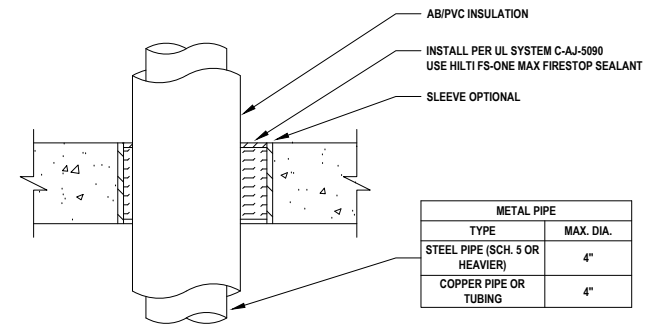
2 MULTIPLE METAL PIPES THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE



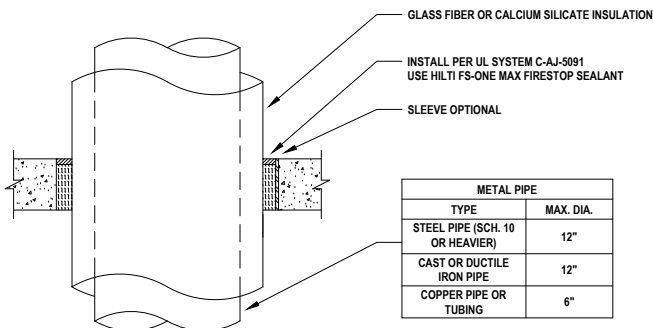
3 PLASTIC PIPE THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE



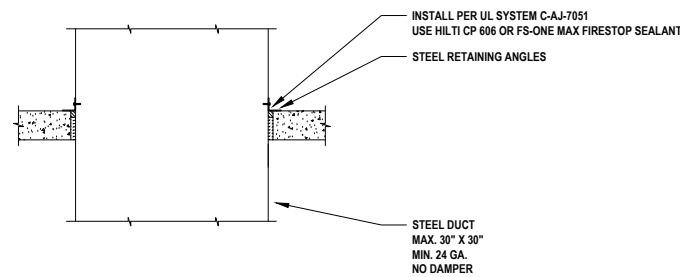
4 PLASTIC PIPE THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE



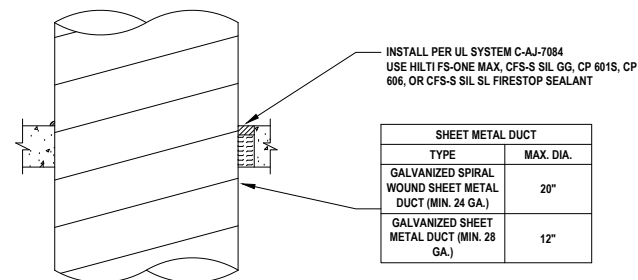
5 METAL PIPE WITH AB/PVC INSULATION THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE



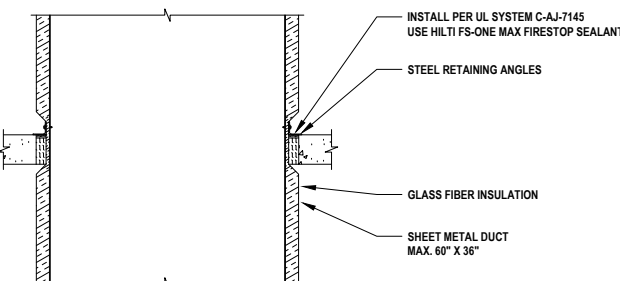
6 METAL PIPE WITH GLASS FIBER OR CALCIUM SILICATE INSULATION THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE



7 METAL DUCT (WITHOUT DAMPER) THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE



8 ROUND SHEET METAL DUCT THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE



9 SHEET METAL DUCT WITH GLASS FIBER INSULATION THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE



10 MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR (2-HR.)  
M.1.1 NOT TO SCALE

Notes:

- 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

For Quality Control requirements, refer to the Quality Control portion of the specification.

- Details shown are typical details, containing general information only. Always refer to the full UL 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:
  - \* Fire Rating (F-Rating)
  - \* Temperature Rating (T-Rating)
  - \* Leakage Rating (L-Rating)
  - \* Water Rating (W-Rating)
  - \* Annular Space
  - \* Percent Fill
  - \* Movement
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- If alternate details matching the field conditions are not available, manufacturer's engineering judgment drawings are acceptable. Contact Hilti Inc. for alternative systems or Engineering Judgment (800-879-8000) Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.

References:

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  - \* NFPA 70 - National Electric Code
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- 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.
  - All rated through-penetration assemblies shall be prominently labeled with a Hilti Firestop Label equipped 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
    - \* Contractor's Name
  - For outlet boxes requiring protection, use only Wall Opening Protective Materials, category CLIV as classified by Underwriter's Laboratories, Fire Resistance Directory (Volume 1.)

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REVISIONS: \_\_\_\_\_

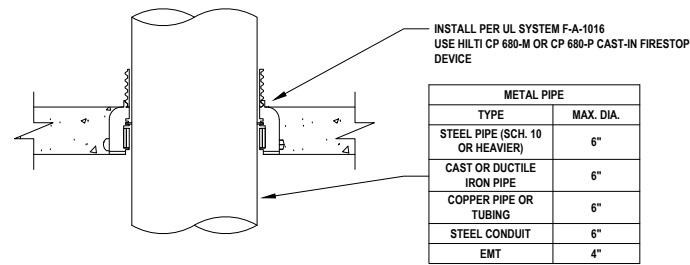
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MECHANICAL PENETRATIONS  
FLAT CONCRETE FLOOR  
2 HR.

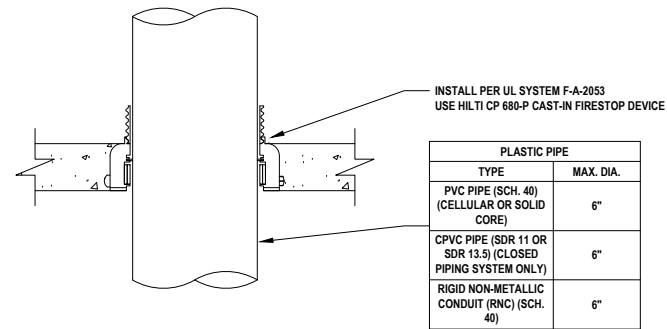
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**M.1.1**

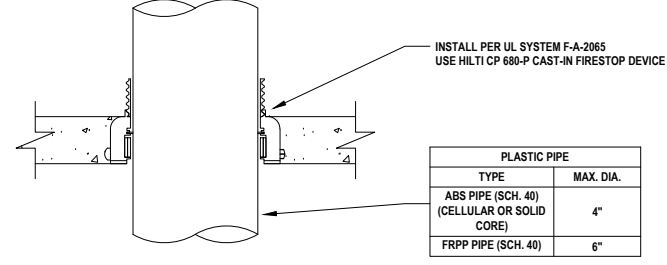
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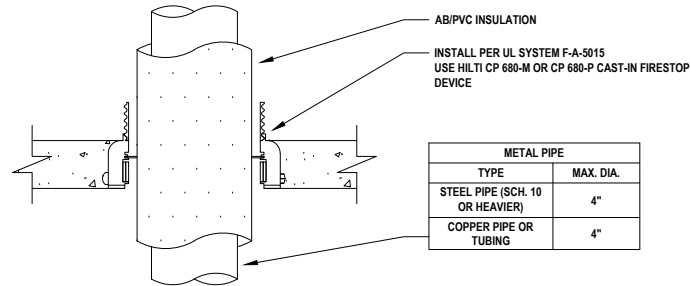
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M.1.2 NOT TO SCALE



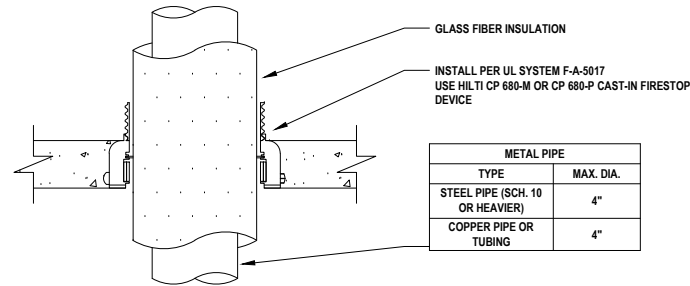
2 PLASTIC PIPE THROUGH CONCRETE FLOOR (2-HR.)  
M.1.2 NOT TO SCALE



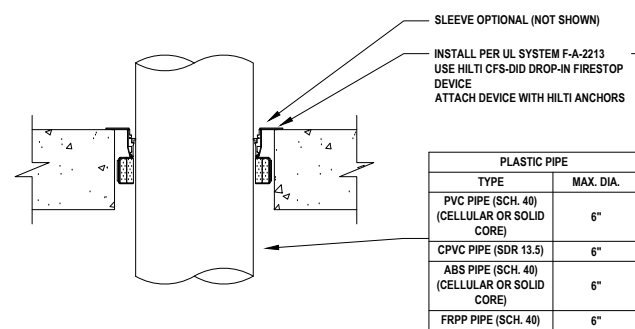
3 PLASTIC PIPE THROUGH CONCRETE FLOOR (2-HR.)  
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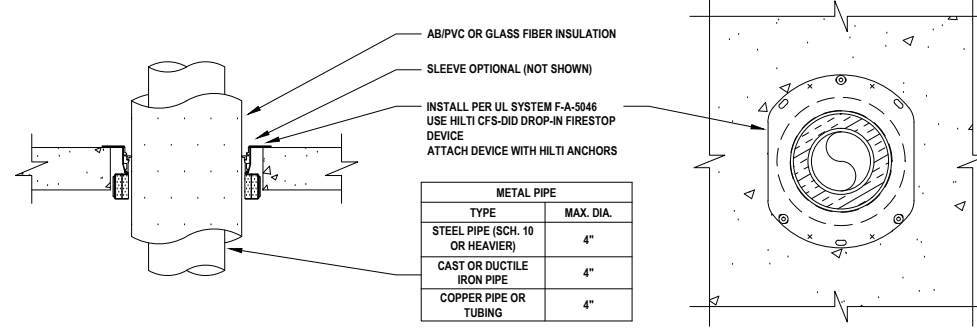
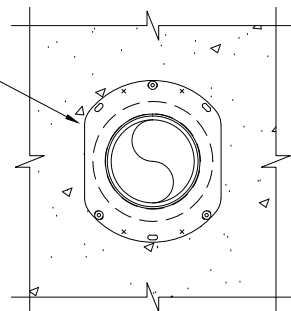
4 METAL PIPE WITH AB/PVC INSULATION THROUGH CONCRETE FLOOR (2-HR.)  
M.1.2 NOT TO SCALE



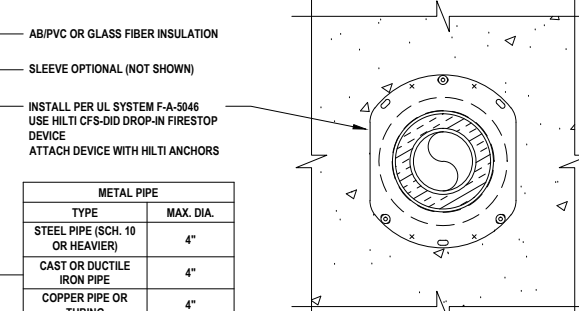
5 METAL PIPE WITH GLASS FIBER INSULATION THROUGH CONCRETE FLOOR (2-HR.)  
M.1.2 NOT TO SCALE



6 PLASTIC PIPE THROUGH CONCRETE FLOOR (2-HR.)  
M.1.2 NOT TO SCALE



7 METAL PIPE WITH AB/PVC OR GLASS FIBER INSULATION THROUGH CONCRETE FLOOR (2-HR.)  
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MECHANICAL PENETRATIONS  
FLAT CONCRETE FLOOR  
2 HR.

SHEET NAME: \_\_\_\_\_

**M.1.2**

SHEET NUMBER: \_\_\_\_\_