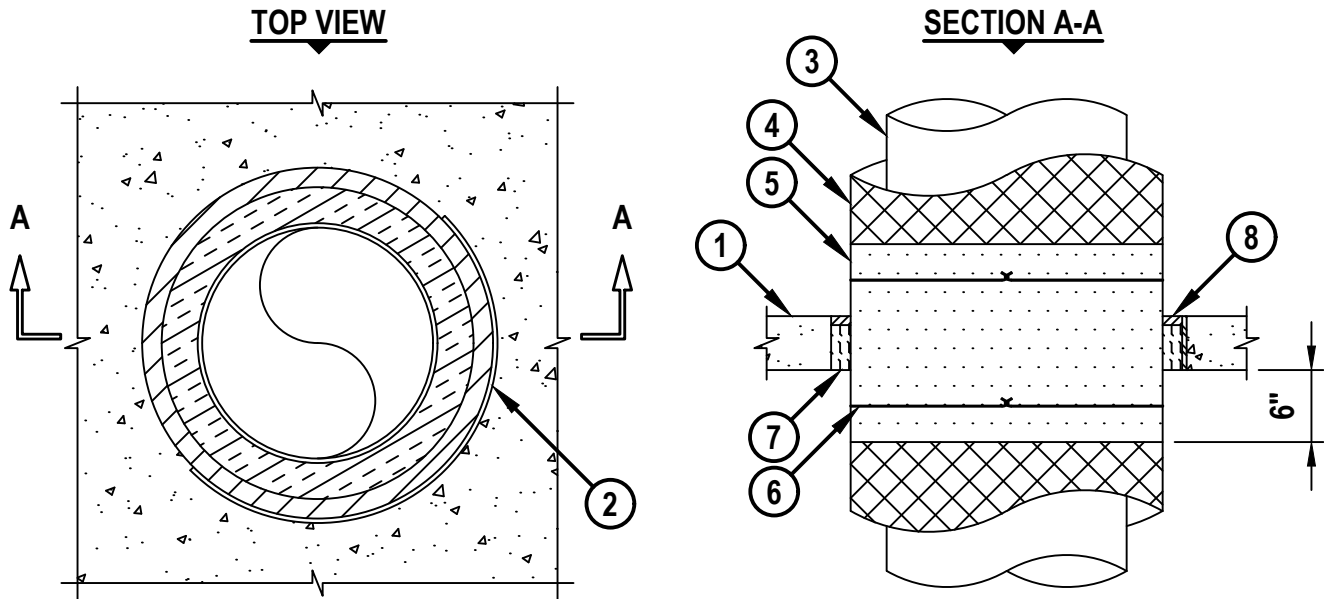


**INSULATED METAL PIPE THROUGH OPTIONAL STEEL SLEEVE IN
CONCRETE FLOOR/WALL OR BLOCK WALL**

F-RATING = 3-HR.
T-RATING = 1/2-HR.

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1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. [OPTIONAL] MAXIMUM 30" NOMINAL DIAMETER STEEL SLEEVE (SCHEDULE 10 OR HEAVIER).
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
 - A. MAXIMUM 20" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 - B. MAXIMUM 20" DIAMETER CAST OR DUCTILE IRON PIPE.
 - C. MAXIMUM 6" DIAMETER COPPER PIPE OR TUBING.
4. MAXIMUM 3" THICK GLASS-FIBER PIPE INSULATION.
5. NOMINAL 3" THICK MINERAL FIBER PIPE INSULATION (MIN. 5 PCF DENSITY) (SEE NOTE NO. 4 BELOW).
6. MINIMUM 18 AWG STEEL TIE WIRE LOCATED 3" BEYOND EACH SURFACE OF FLOOR OR WALL.
7. MINIMUM 3" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED.
8. MINIMUM 3/4" DEPTH HILTI INTUMESCENT FS-ONE MAX FIRESTOP SEALANT.

NOTES :

1. MAXIMUM DIAMETER OF OPENING = 30".
2. ANNULAR SPACE [WITHOUT SLEEVE] = MINIMUM 1/4", MAXIMUM 3".
3. ANNULAR SPACE [WITH SLEEVE] = MINIMUM 1", MAXIMUM 2-1/4".
4. UL CLASSIFIED PIPE INSULATION TO EXTEND 6" ABOVE AND BELOW FLOOR. SECURE WITH TIE WIRE AS SHOWN. COVER WITH UL CLASSIFIED ALL SERVICE JACKET AND PROPERLY JOINED WITH EXISTING INSULATION. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS.
5. MINIMUM 3/4" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.



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Sheet	1 of 1
Scale	1/16" = 1"
Date	Apr. 04, 2016

Drawing No.

**CAJ
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