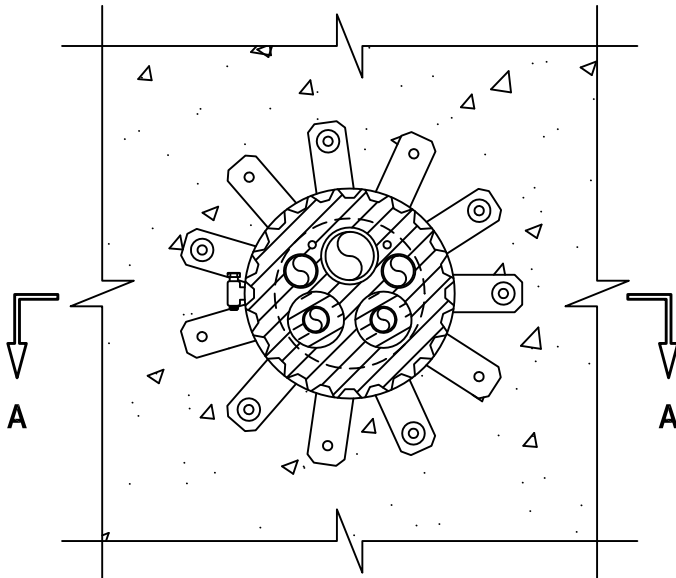


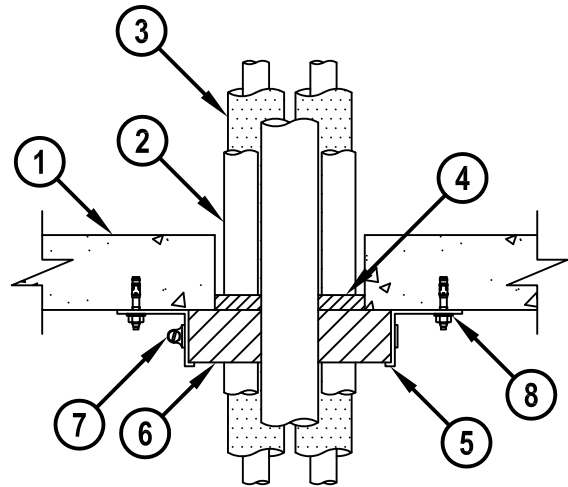
**MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL  
OR BLOCK WALL**

F-RATING = 2-HR.  
T-RATING = 0-HR.

**BOTTOM VIEW**



**SECTION A-A**



1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
  - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 2-1/2" THICK).
  - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEMS MAY BE ANY COMBINATION OF THE FOLLOWING :
  - A. MAXIMUM 1" NOMINAL DIAMETER COPPER TUBE (TYPE L, OR HEAVIER) (MAX. QTY. = 2).
  - B. MAXIMUM 3/4" NOMINAL DIAMETER COPPER TUBE (TYPE L, OR HEAVIER) (MAX. QTY. = 2).
  - C. MAXIMUM 1-1/2" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40-SOLID CORE) (CLOSED OR VENTED PIPING SYSTEM).
  - D. MAXIMUM 4 PR. NO. 18 AWG (OR SMALLER) CABLE WITH PVC INSULATION AND JACKET.
3. MAXIMUM 1/2" THICK AB/PVC FLEXIBLE FOAM PIPE INSULATION.
4. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT.
5. HILTI RETAINING COLLAR WRAPPED AROUND PIPE (SEE NOTE NO. 2 BELOW) AND OVERLAPPING MINIMUM 1" AT SEAM.
6. HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT TO COMPLETELY FILL HILTI RETAINING COLLAR.
7. NOMINAL 1/2" WIDE STAINLESS STEEL HOSE CLAMP(S) FASTENED TO MID-HEIGHT OF COLLAR.
8. EVERY OTHER TAB OF RETAINING COLLAR SECURED TO BOTTOM OF FLOOR WITH 1/4" x 1-3/4" LONG STEEL EXPANSION BOLTS OR 0.145 DIAMETER x 1-1/4" LONG POWDER ACTUATED FASTENERS IN CONJUNCTION WITH 1-7/16" DIAMETER STEEL WASHERS (EX. HILTI KWIK-BOLT 3, DX PINS).

**NOTES :** 1. MAXIMUM DIAMETER OF OPENING = 5".  
 2. COLLAR SHALL BE 1" LARGER IN DIAMETER THAN THE OPENING.  
 3. HILTI RETAINING COLLARS AND FS-ONE MAX OR FS-ONE ARE REQUIRED ON BOTH SIDES OF A WALL.

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Sheet	1 of 1
Scale	5/32" = 1"
Date	Jan. 07, 2015

Drawing No.  
**CAJ  
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