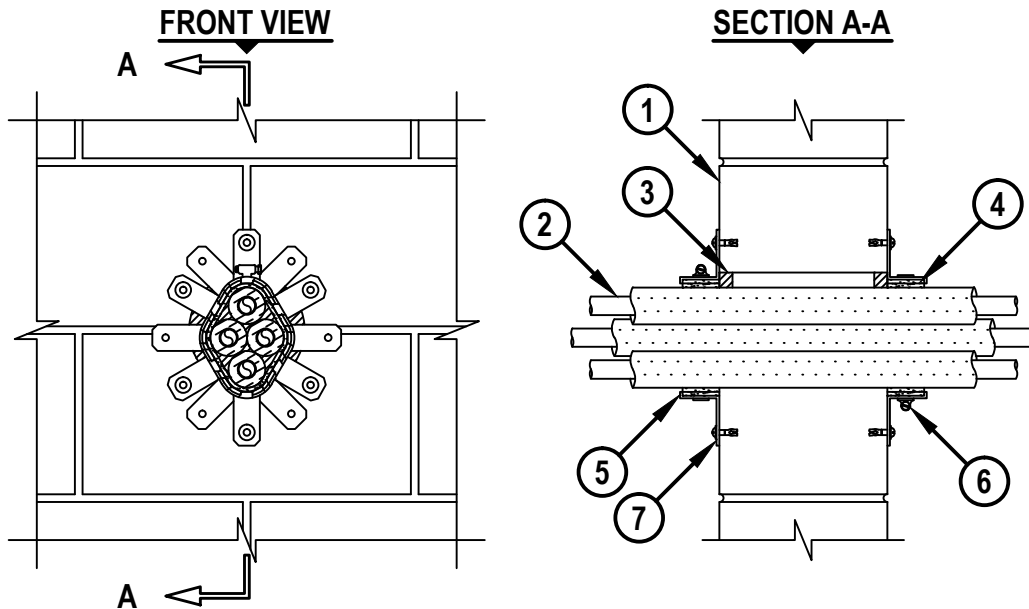


MULTIPLE PENETRATING ITEMS THROUGH CONCRETE OR CONCRETE BLOCK WALL ASSEMBLY

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

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1. CONCRETE WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 6" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. ONE OR MORE PENETRANTS INSTALLED WITHIN OPENING. PENETRANTS SHALL BE TIGHTLY BUNDLED AND CONSIST OF THE FOLLOWING (MAX. QTY. = 4 PENETRANTS) :
 - A. MAXIMUM 7/8" NOMINAL DIAMETER STREAMLINE® ACR-TYPE L COPPER TUBING.
 - B. NOMINAL 1/2" THICK STREAMLINE DURAGUARD™ POLYETHYLENE TUBING INSULATION.
3. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT (SEE NOTE NO. 3 BELOW).
4. HILTI CP 648E WRAP STRIP (NOMINAL 3/16" THICK x 1-3/4" WIDE) CONTINUOUSLY WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE PENETRANTS, COVERING TWO TIMES, WITH ENDS BUTTED AND HELD IN PLACE WITH TAPE.
5. HILTI 1-3/4" RETAINING COLLAR WRAPPED AROUND WRAP STRIP, OVERLAPPING MINIMUM 1".
6. NOMINAL 1/2" WIDE STAINLESS STEEL HOSE CLAMP SECURED TO THE COLLAR AT ITS MID-HEIGHT.
7. EVERY OTHER TAB OF RETAINING COLLAR SECURED TO WALL WITH 1/4" x 1-3/4" LONG STEEL EXPANSION BOLTS OR MIN. 0.145" x 1-1/4" LONG POWDER ACTUATED FASTENERS.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 5-1/2".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-3/4".
 3. ADDITIONAL HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT FORCED INTO GROUPED PENETRANT INTERSTICES TO MAXIMUM EXTENT POSSIBLE.



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Sheet	1 of 1
Scale	7/64" = 1"
Date	Jan. 29, 2018

Drawing No.

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