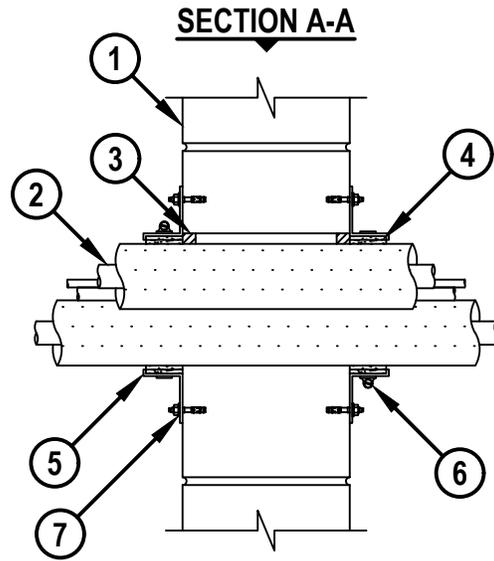
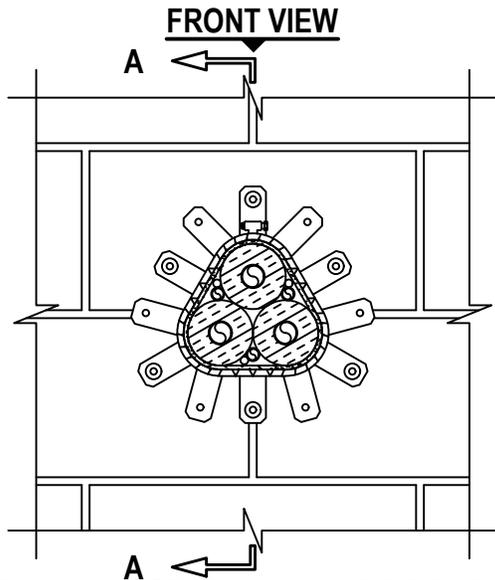


MULTIPLE PENETRATING ITEMS THROUGH CONCRETE OF BLOCK WALL ASSEMBLY

F-RATING = 2-HR.
T-RATING = 1-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 AC LINE SETS INSTALLED WITHIN OPENING. EACH LINE SET SHALL BE TIGHTLY BUNDLED AND CONSIST OF THE FOLLOWING (MAX. QTY. = 3 LINE SETS) :
 - A. MAXIMUM 1" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 5 OR HEAVIER), CAST IRON PIPE, COPPER PIPE OR TUBING, OR STEEL CONDUIT OR EMT (MAX. QTY. = 1).
 - B. MAXIMUM 4 PAIR NO. 18 AWG THERMOSTAT CABLE WITH PVC JACKET (MAX. QTY. = 1).
 - C. MAXIMUM 1" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 5 OR HEAVIER), CAST IRON PIPE, COPPER PIPE OR TUBING, OR MAXIMUM 1/2" NOMINAL DIAMETER STEEL CONDUIT OR EMT WITH NOMINAL 1" THICK AB/PVC PIPE INSULATION (MAX. QTY. = 1).
3. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT (SEE NOTE NO. 4 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 COLLAR CLAMP FASTENED AT MID-HEIGHT OF RETAINING COLLAR.
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 = 6".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-1/2".
 3. PENETRATING ITEMS NOT TO EXCEED 84% OF THE CROSS-SECTIONAL AREA OF OPENING.
 4. 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	July 31, 2019

Drawing No.
**WJ
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