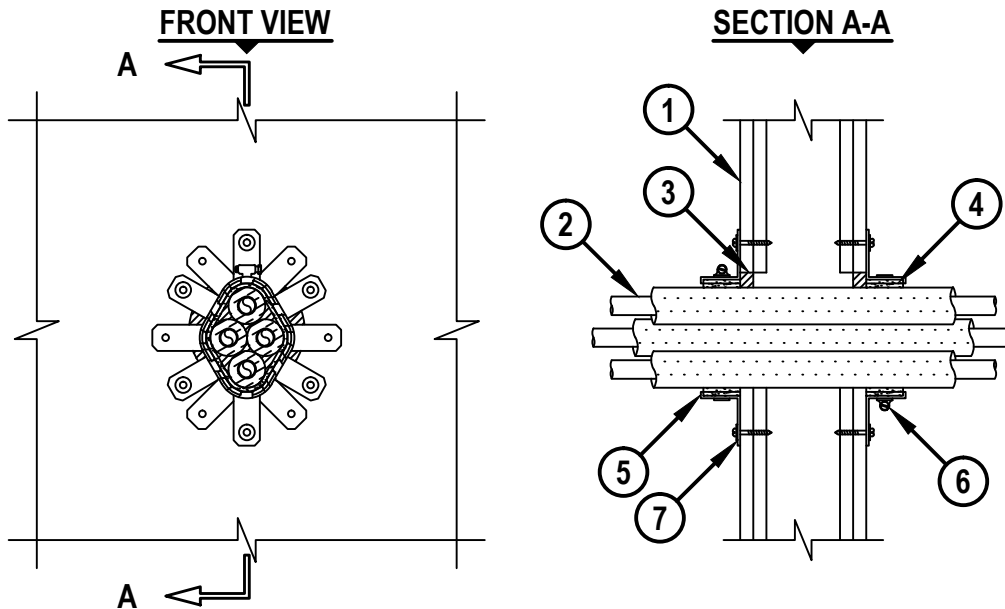


MULTIPLE PENETRATING ITEMS THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.

T-RATING = 1/2-HR.



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1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300, U400, V400, OR W400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN) TO INCLUDE THE FOLLOWING CONSTRUCTION FEATURES :
 - A. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER (SPACED MAXIMUM 16" OC). STEEL STUDS TO BE MINIMUM 3-1/2" WIDE (SPACED MAXIMUM 24" OC).
 - B. NOMINAL 5/8" THICK GYPSUM WALLBOARD. TYPE, NUMBER OF LAYERS, AND SHEET ORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL DESIGN.
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 1-1/2" LONG STEEL DRYWALL OR LAMINATE SCREWS IN CONJUNCTION WITH MINIMUM 3/4" DIAMETER STEEL WASHERS.

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.
WL 5346a