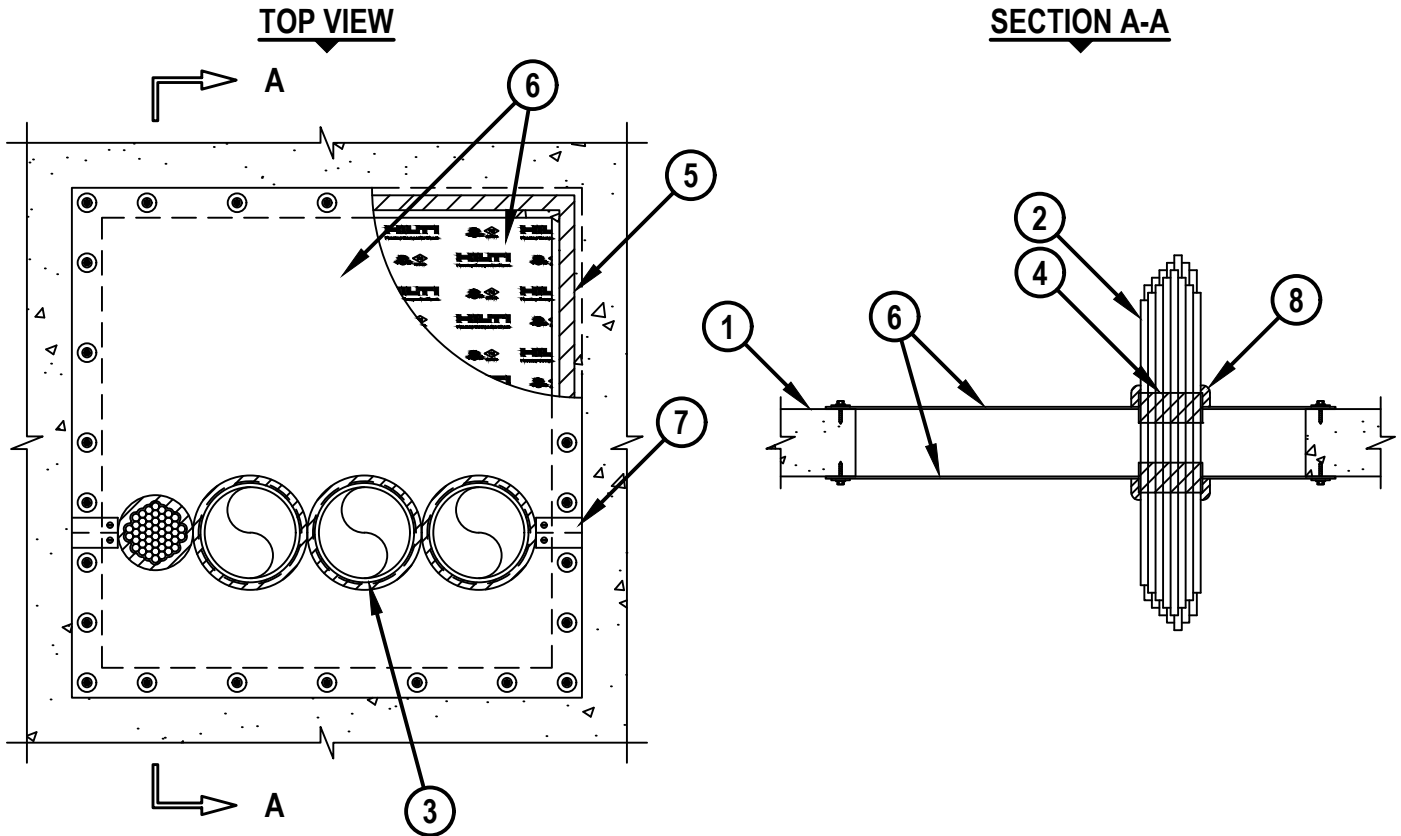


MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY

F-RATING = 2-HR. OR 4-HR.

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

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1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. OR 4-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. ONE OR MORE MAXIMUM 4" DIAMETER CABLE BUNDLES CONSISTING OF A COMBINATION OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 750 MCM POWER CABLES, THHN OR THWN JACKETED.
 - B. MAXIMUM 8/C NO. 12 AWG MULTICONDUCTOR POWER AND CONTROL CABLE.
 - C. MAXIMUM 300 PAIR NO. 24 AWG COPPER CONDUCTOR COMMUNICATION CABLE WITH PVC JACKET.
 - D. MULTIPLE FIBER OPTIC COMMUNICATION CABLE WITH PVC JACKET.
 - E. MAXIMUM 25 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - F. ANY MAXIMUM 2/C NO. 18 AWG METAL CLAD OR ARMORED CABLE WITH STEEL OR ALUMINUM JACKET CURRENTLY LISTED UNDER THE THROUGH PENETRATING PRODUCTS CATEGORY (FOR 2-HR. F-RATING ONLY).



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Sheet	1 of 2
Scale	5/64" = 1"
Date	Feb. 17, 2020

Drawing No.

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MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY

F-RATING = 2-HR. OR 4-HR.

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

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3. ONE OR MORE OF THE FOLLOWING INSTALLED ALONG THE SAME CENTER LINE :
 - A. MAXIMUM 6" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 - B. MAXIMUM 6" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
 - C. MAXIMUM 6" NOMINAL DIAMETER STEEL ELECTRICAL METALLIC TUBING.
 - D. MAXIMUM 6" NOMINAL DIAMETER RIGID STEEL CONDUIT.
4. HILTI CP 619T FIRESTOP PUTTY ROLL TO BE DOUBLE STACKED AND INSTALLED TO TIGHTLY FOLLOW THE CONTOUR OF THE PENETRANTS AROUND ITS ENTIRE PERIMETER. 2" WIDE LAYER OF PUTTY REQUIRED ON BOTH SIDES OF FLOOR OR BOTH SIDES OF WALL ASSEMBLY AND SHOULD PROJECT 1" BEYOND EACH FACE OF THE COMPOSITE SHEET.
5. ONE LAYER HILTI CP 619T PUTTY ROLL OR MINIMUM 1/2" BEAD HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT APPLIED UNDER COMPOSITE SHEET AROUND PERIMETER OF OPENING AND OVER BUTTED SEAM OR SLIT MADE IN COMPOSITE SHEET (NOT SHOWN ON SEAM).
6. HILTI CFS-COS FIRESTOP COMPOSITE SHEET CUT TO OVERLAP FLOOR OR WALL A MINIMUM OF 2". COMPOSITE SHEET INSTALLED WITH THE ALUMINUM FOIL FACING AGAINST THE FLOOR OR WALL AND SECURED WITH MINIMUM 3/16" DIAMETER BY 1-1/4" LONG STEEL ANCHOR SCREWS WITH 1-1/4" DIAMETER STEEL FENDER WASHERS AT MAXIMUM 2" FROM ENDS AND MAXIMUM 6" C/C. COMPOSITE SHEET CUT TO TIGHTLY FOLLOW THE CONTOUR OF THE PENETRANTS.
7. MINIMUM 2" WIDE STAINLESS STEEL STRIP (MIN. 24 GA.) CENTERED OVER ENTIRE LENGTH OF BUTT SEAM OR SLIT MADE IN THE COMPOSITE SHEET. COVER STRIP SECURED TO COMPOSITE SHEET WITH STEEL SHEET METAL SCREWS OR STEEL RIVETS SPACED MAXIMUM 3" C/C ON EACH SIDE OF SEAM OR SLIT.
8. GENEROUS BEAD OF HILTI CP 618 FIRESTOP PUTTY STICK OR HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT (1" WIDE x 2" HIGH) APPLIED AROUND THE PENETRANTS AT THEIR EGRESS FROM THE COMPOSITE SHEET ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY. FOR WALLS AND FLOOR RATED FOR 4-HOUR, ONLY HILTI FS-ONE MAX SHALL BE USED. WHEN ANNULAR SPACE BETWEEN PENETRANTS IS LESS THAN 2" THE SPACE BETWEEN PENETRANTS SHALL BE FILLED TO A MINIMUM HEIGHT OF 2" ABOVE FLOOR OR WALL.

- NOTES :**
1. MAXIMUM SIZE OF OPENING = 30" x 30".
 2. ANNULAR SPACE BETWEEN PENETRANTS AND PERIPHERY OF OPENING AND BETWEEN INDIVIDUAL PENETRANTS = MINIMUM 1".
 3. WHEN COMPOSITE SHEET IS INSTALLED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY, F-RATING IS 4-HR. AS AN OPTION, THE COMPOSITE SHEET MAY BE INSTALLED ON ONLY THE TOP SURFACE OF THE FLOOR TO ATTAIN A 2-HR. FIRE-RATING.
 4. HILTI CFS-COS FIRESTOP COMPOSITE SHEET AND HILTI FS-ONE MAX/CP 619T ARE REQUIRED ON BOTH SIDES OF A WALL.
 5. HILTI CP 617 FIRESTOP PUTTY PAD MAY BE USED AS AN OPTION TO HILTI CP 619T FIRESTOP PUTTY ROLL.
 6. WHEN COMPOSITE SHEET IS INSTALLED ON TOP SIDE OF FLOOR ONLY, THE FILL MATERIAL (ITEMS 4, 5, AND 8) ARE ALSO REQUIRED TO BE INSTALLED ON TOP SURFACE OF FLOOR.



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