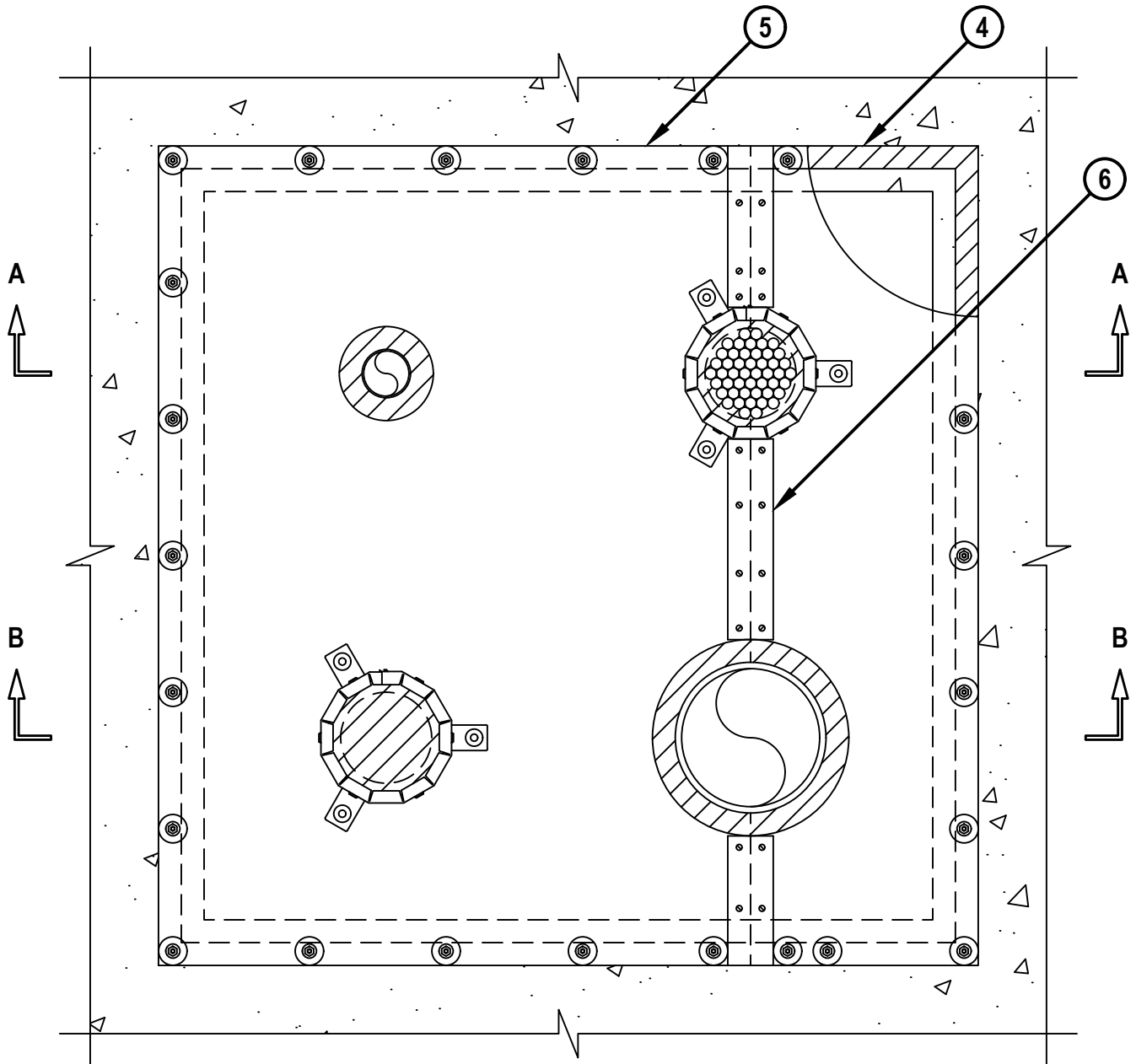


MULTIPLE PENETRATING THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY

F-RATING = 3-HR.
FT, FH, AND FTH-RATINGS = 0-HR.

TOP VIEW

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Sheet	1 of 4
Scale	9/64" = 1"
Date	Feb. 05, 2021

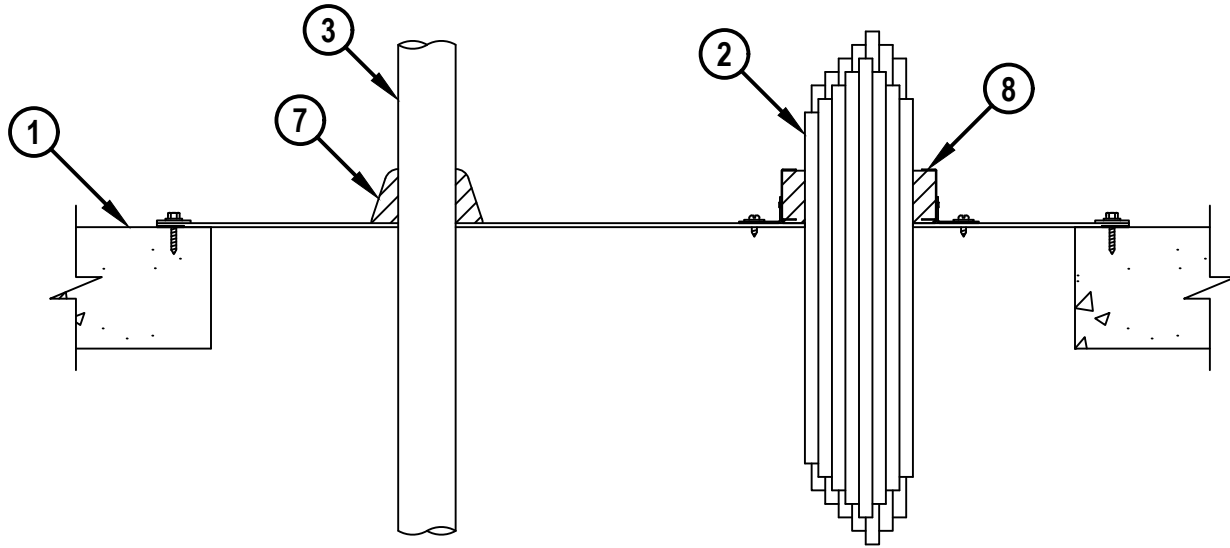
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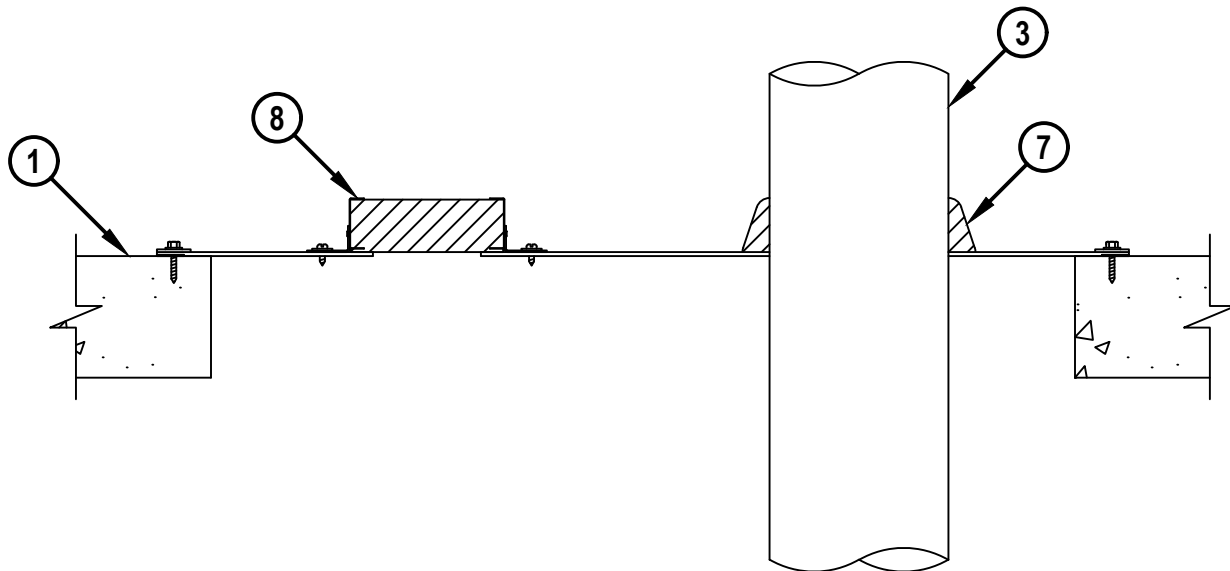
MULTIPLE PENETRATING THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY

F-RATING = 3-HR.
FT, FH, AND FTH-RATINGS = 0-HR.

SECTION A-A



SECTION B-B



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Sheet	2 of 4
Scale	9/64" = 1"
Date	Feb. 05, 2021

Drawing No.
cUL
CAJ8317b

MULTIPLE PENETRATING THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY

F-RATING = 3-HR.
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1. CONCRETE FLOOR OR WALL ASSEMBLY (3-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 ANY COMBINATION OF THE CABLE TYPES LISTED BELOW MAY BE INSTALLED WITHIN THE OPENING :
 - A. MAX 100 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR TELECOMMUNICATION CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION.
 - B. MAX 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE JACKET AND INSULATION.
 - C. MAX 4/0 AWG TYPE RHH GROUND CABLE.
 - D. MAX 4 PAIR NO. 22 AWG CAT 6 COMPUTER CABLE.
 - E. MAX RG 6/U COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKETING.
 - F. FIBER OPTIC CABLE WITH POLYVINYL CHLORIDE (PVC) OR POLYETHYLENE (PE) JACKET AND INSULATION HAVING A MAX DIAMETER OF 3/8" (10mm).
 - G. ANY MAX 2/C NO. 18 AWG (OR SMALLER) METAL CLAD CABLE OR ARMORED CABLE WITH STEEL OR ALUMINUM JACKET CURRENTLY CLASSIFIED UNDER THE THROUGH PENETRATING PRODUCTS CATEGORY.
3. ONE OR MORE OF THE FOLLOWING MAY BE INSTALLED WITHIN THE OPENING :
 - A. MAXIMUM 8" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 - B. MAXIMUM 8" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
 - C. MAXIMUM 4" NOMINAL DIAMETER STEEL ELECTRICAL METALLIC TUBING.
 - D. MAXIMUM 6" NOMINAL DIAMETER RIGID STEEL CONDUIT.
 - E. MAXIMUM 2" NOMINAL DIAMETER COPPER PIPE OR TUBING.
4. MINIMUM 1/2" DIAMETER BEAD OF HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, OR ONE LAYER OF HILTI CP 619T FIRESTOP PUTTY ROLL (1/8" THICK x 1" WIDE) POSITIONED BETWEEN COMPOSITE SHEET AND FLOOR OR WALL AROUND THE PERIMETER OF THE OPENING AND POSITIONED OVER BUTTED SEAM OR SLIT MADE IN COMPOSITE SHEET (NOT SHOWN OVER SEAM).
5. 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 WITH A MAX SPACE BETWEEN THE PENETRANTS AND COMPOSITE SHEET OF 1/4". ONLY ONE SEAM MAY EXIST IN THE COMPOSITE SHEET.



Hilti Firestop Systems

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Sheet	3 of 4
Scale	-
Date	Feb. 05, 2021

Drawing No.

cUL
CAJ8317b

MULTIPLE PENETRATING THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY

F-RATING = 3-HR.
 FT, FH, AND FTH-RATINGS = 0-HR.

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6. MINIMUM 2" WIDE STAINLESS STEEL STRIP (MIN. 24 GA.) CENTERED OVER ENTIRE LENGTH OF BUTT SEAM OR SLIT IN THE COMPOSITE SHEET. COVER STRIP SECURED TO COMPOSITE SHEET WITH NO. 10 x 3/4" STEEL SHEET METAL SCREWS WITH 3/4" WASHERS SPACED 6" C/C ON EACH SIDE OF SEAM OR SLIT.
7. MINIMUM 1" WIDE BY 1" HIGH DOME OF HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, HILTI CP 619T FIRESTOP PUTTY ROLL, OR HILTI CP 618 FIRESTOP PUTTY STICK APPLIED AROUND THE PENETRATING ITEMS FROM ITEM 3 AT THEIR EGRESS FROM THE COMPOSITE SHEET ON THE TOP SURFACE OF THE COMPOSITE SHEET IN FLOORS, OR AT THE OUTER SURFACES OF THE COMPOSITE SHEET ON EACH SIDE OF A WALL.
8. HILTI CFS-CC 4" FIRESTOP CABLE COLLAR SECURED TO TOP SURFACE OF HILTI CFS-COS FIRESTOP COMPOSITE SHEET IN FLOORS (OR TO OUTER FACE OF EACH COMPOSITE SHEET ON BOTH SIDES OF A WALL) WITH NO. 10 x 3/4" LONG STEEL SHEET METAL SCREWS WITH MIN 3/4" WASHERS THROUGH EACH FASTENING HOOK. A MAXIMUM 4" DIAMETER OPENING MAY BE MADE IN THE COMPOSITE SHEET WHERE CABLE COLLAR IS USED. CABLE COLLAR IS TO BE CENTERED OVER OPENING. INTEGRATED FIRESTOP PLUG WITHIN COLLAR IS CUT TO FIT TIGHTLY AROUND THE CABLE BUNDLE.

NOTES : 1. MAXIMUM AREA OF OPENING = 1024 SQ. IN., WITH A MAXIMUM DIMENSION OF 32".
 2. ANNULAR SPACE BETWEEN PENETRATING ITEMS AND THE PERIPHERY OF THE OPENING = MINIMUM 1".
 3. ANNULAR SPACE BETWEEN PENETRATING ITEMS = MINIMUM 1".
 4. HILTI CFS-COS FIRESTOP COMPOSITE SHEET, HILTI CP 619 T PUTTY ROLL, HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, HILTI CP 618 FIRESTOP PUTTY STICK, AND HILTI CFS-CC FIRESTOP CABLE COLLAR ARE REQUIRED ON BOTH SIDES OF A WALL.

 Hilti Firestop Systems	HILTI, Inc. Plano, Texas USA (800) 879-8000	Sheet 4 of 4	Drawing No. cUL CAJ8317b
		Scale -	
		Date Feb. 05, 2021	
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