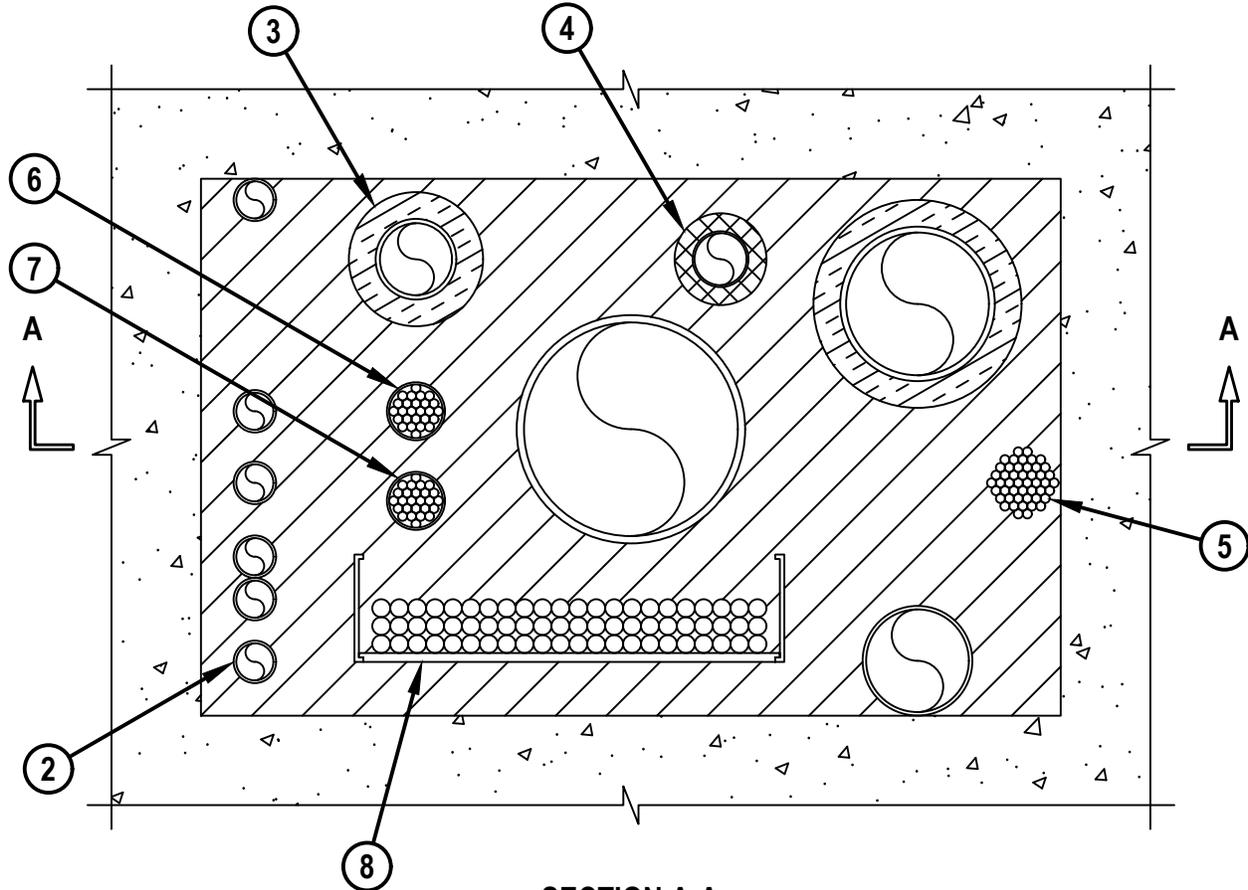


MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

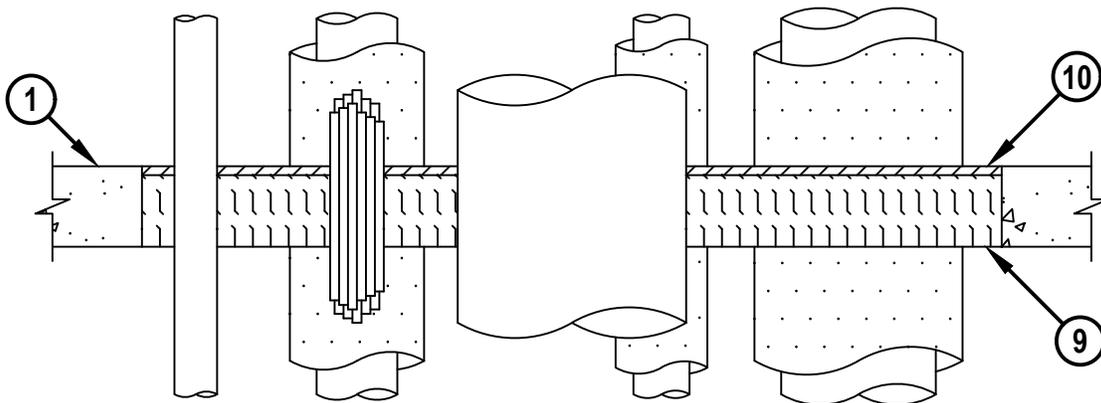
F-RATING = 2-HR.
T-RATING = 0-HR.

CAJ8143f.011223

TOP VIEW



SECTION A-A



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Sheet	1 of 3
Scale	3/32" = 1"
Date	Jan, 12, 2023

Drawing No.
**CAJ
8143f**

Saving Lives through Innovation and Education

MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

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

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SYSTEM TESTED WITH A PRESSURE DIFFERENTIAL OF 2.5 PA BETWEEN THE EXPOSED AND THE UNEXPOSED SURFACES WITH THE HIGHER PRESSURE ON THE EXPOSED SIDE.

1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2" THICK).
 - B. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 5" THICK).
 - C. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. ONE OR MORE OF THE FOLLOWING PENETRATING ITEMS (ITEMS 2-7) AND IN ANY COMBINATION MAY BE INSTALLED WITHIN THE OPENING :
 - A. MAXIMUM 24" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 40 OR HEAVIER).
 - B. MAXIMUM 24" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
 - C. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
 - D. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
 - E. MAXIMUM 4" NOMINAL DIAMETER EMT.
 - F. MAXIMUM 2" NOMINAL DIAMETER PVC PLASTIC PIPE (SCH 40) (CELLULAR OR SOLID CORE) (CLOSED OR VENTED PIPING SYSTEM).
 - G. MAXIMUM 2" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 13.5) (CLOSED PIPING SYSTEM).
 - H. MAXIMUM 2" NOMINAL DIAMETER RIGID NONMETALLIC PVC CONDUIT (SCH 40).
3. [OPTIONAL] ANY OR ALL METALLIC PIPES (8" OR SMALLER) MAY BE INSULATED WITH MAXIMUM 1-1/2" THICK GLASS-FIBER PIPE INSULATION.
4. [OPTIONAL] ANY OR ALL METALLIC PIPES (2" OR SMALLER) MAY BE INSULATED WITH MAXIMUM 2" THICK GLASS-FIBER PIPE INSULATION OR MAXIMUM 1" THICK AB/PVC PIPE INSULATION.
5. MAXIMUM 4" NOMINAL DIAMETER CABLE BUNDLE OR INDIVIDUAL CABLE TO CONSIST OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 500 KCMIL SINGLE COPPER OR ALUMINUM CONDUCTOR POWER CABLE WITH PVC JACKET.
 - B. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - C. MAXIMUM 7/C NO. 12 AWG POWER CABLE WITH PVC JACKET.
 - D. MAXIMUM 1/2" DIAMETER FIBER OPTIC CABLE WITH PVC JACKET.
 - E. MAXIMUM 3/C NO. 12 AWG STEEL CLAD CABLE.
6. MAXIMUM 3/C NO. 2/0 AWG COPPER CONDUCTOR PVC JACKETED ALUMINUM OR STEEL CLAD, TECK 90 CABLE.
7. MAXIMUM 4/C NO. 750 KCMIL ALUMINUM OR COPPER CONDUCTOR WITH ALUMINUM OR STEEL CLAD, WITH OR WITHOUT PVC JACKET.
8. MAXIMUM 24" x 6" ALUMINUM OR STEEL OPEN LADDER CABLE TRAY (MAX. QTY. = 1). ANY COMBINATION OF THE TYPES AND SIZE OF CABLES DESCRIBED IN ITEM NO. 5 ABOVE MAY BE USED. CABLES TO FILL MAXIMUM 40% CROSS-SECTIONAL AREA OF TRAY AND HAVE A MAXIMUM 3" CABLE LOADING DEPTH.
9. MINIMUM 4" THICKNESS MINERAL WOOL (MINIMUM 4 PCF DENSITY) TIGHTLY PACKED.
10. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT.



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MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 2-HR.

T-RATING = 0-HR.

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ANNULAR SPACE	MINIMUM	MAXIMUM
BETWEEN INDIVIDUAL CABLES AND CABLE BUNDLES	1/2"	12"
BETWEEN INDIVIDUAL/BUNDLES CABLES AND OTHER PENETRANTS	1/2"	12"
-EXCEPTION : BETWEEN INDIVIDUAL/BUNDLED CABLES AND COPPER PIPES GREATER THAN 3", STEEL PIPE, IRON PIPE, AND CONDUITS GREATER THAN 4"	2"	12"
BETWEEN INSULATED PIPES	2"	12"
BETWEEN METALLIC PIPES	2"	12"
- EXCEPTION 1) BETWEEN 3" AND SMALLER COPPER PIPES	1/2"	12"
-EXCEPTION 2) BETWEEN 2" AND SMALLER STEEL PIPES AND CONDUITS	0"	12"
-EXCEPTION 3) BETWEEN 4" AND SMALLER STEEL PIPES AND CONDUITS	1/2"	12"
BETWEEN INSULATED PIPES, NONMETALLIC PIPES, OR CABLE TRAY AND PERIPHERY OF OPENING	1/2"	12"
BETWEEN ALL OTHER PENETRANTS AND PERIPHERY OF OPENING	0"	12"
BETWEEN CABLE TRAY AND ALL OTHER PENETRANTS	3"	12"
BETWEEN NONMETALLIC PENETRANTS	1/2"	12"
BETWEEN NONMETALLIC PENETRANTS AND OTHER PENETRANTS	2"	12"

NOTES : 1. MAXIMUM AREA OF OPENING = 1440 SQ. IN. WITH A MAXIMUM DIMENSION OF 48".
 2. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.



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