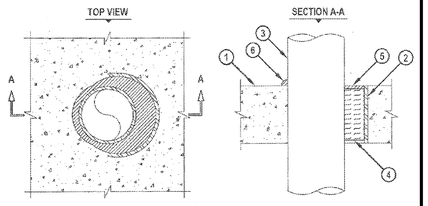
UL/cUL SYSTEM NO. C-AJ-1421

METAL PIPE THROUGH A SLEEVE IN CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 2-HR. AND 3-HR.
T-RATING = 0-HR.



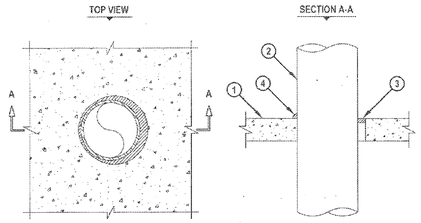
1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. OR 3-HR. FIRE-RATING) :
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
   B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. OPTIONAL : MAXIMUM 6" DIAMETER STEEL PIPE SLEEVE (SCHEDULE 40 OR HEAVIER).
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 4" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 4" DIAMETER CAST IRON PIPE.
   C. MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE.
   D. MAXIMUM 4" NOMINAL DIAMETER STEEL CONDUIT.
   E. MAXIMUM 4" NOMINAL DIAMETER EMT.
4. MINIMUM 4" THICKNESS MINERAL WOOL (MINIMUM 4 PCF DENSITY) TIGHTLY PACKED.
5. MINIMUM 1/4" DEPTH CP 604 SELF-LEVELING FIRESTOP SEALANT OR HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
6. MINIMUM 1/4" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT AT POINT OF CONTACT. (NOT REQUIRED WHEN HILTI CP 604 SELF-LEVELING FIRESTOP SEALANT IS USED, ITEM NO. 5).

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 6".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 5-3/8".
3. MINIMUM 1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON EACH SIDE OF A WALL ASSEMBLY.
4. F-RATING IS 3-HR. WHEN HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IS USED, AND 2-HR. WHEN HILTI CP 604 SELF-LEVELING FIRESTOP SEALANT IS USED.

UL/cUL SYSTEM NO. C-AJ-1291

METAL PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

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



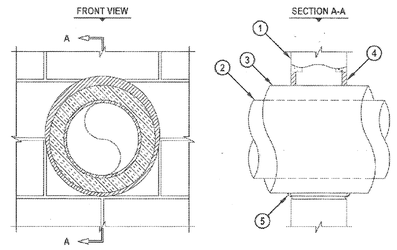
1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MIN. 2-1/2" THICK).
   B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 30" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 30" NOMINAL DIAMETER CAST IRON PIPE.
   C. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
   D. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
   E. MAXIMUM 4" NOMINAL DIAMETER EMT.
3. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
4. MINIMUM 1/4" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 30-7/8".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 7/8".
3. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.

UL/cUL SYSTEM NO. W-J-5042

INSULATED METAL PIPE THROUGH 1-HR. OR 2-HR. CONCRETE WALL OR CONCRETE BLOCK WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 1/2-HR., 3/4-HR., 1-HR., 1-1/2-HR. (SEE UL FIRE RESISTANCE DIRECTORY)
L-RATING AT AMBIENT = 4 CFM/SQ. FT.
L-RATING AT 400° F = LESS THAN 1 CFM/SQ. FT.



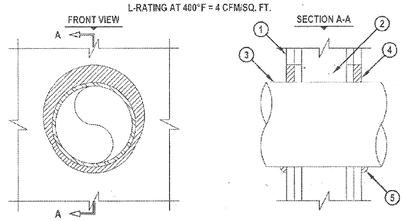
1. CONCRETE WALL ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN) :
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MIN. 3-3/4" THICK, FOR 1-HR. FIRE-RATING).
   B. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MIN. 5" THICK, FOR 2-HR. FIRE-RATING).
   C. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 12" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE OR COPPER TUBING.
3. NOMINAL 2" THICK GLASS-FIBER PIPE INSULATION.
4. MINIMUM 5/8" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
5. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 19".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-1/2".

UL/cUL SYSTEM NO. W-L-1054

METAL PIPE THROUGH 1-HR. OR 2-HR. GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR.
L-RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L-RATING AT 400°F = 4 CFM/SQ. FT.



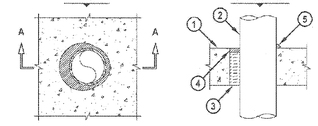
1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING (2-HR. SHOWN).
2. (NOT SHOWN). WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 30" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 30" DIAMETER CAST IRON PIPE.
   C. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
   D. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
   E. MAXIMUM 4" NOMINAL DIAMETER EMT.
4. MINIMUM 5/8" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
5. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING :
A. 32-1/4" FOR STEEL STUD WALLS.
B. 14-1/2" FOR WOOD STUD WALLS.
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/4".
3. PIPE MAY BE INSTALLED WITH CONTINUOUS POINT OF CONTACT.
4. PIPE MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45° FROM PERPENDICULAR.

UL/cUL SYSTEM NO. C-AJ-1149

METAL PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 2-HR.
T-RATING = 0-HR.
L-RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L-RATING AT 400°F = 4 CFM/SQ. FT.
W-RATING = CLASS I (SEE NOTE NO. 4 BELOW)



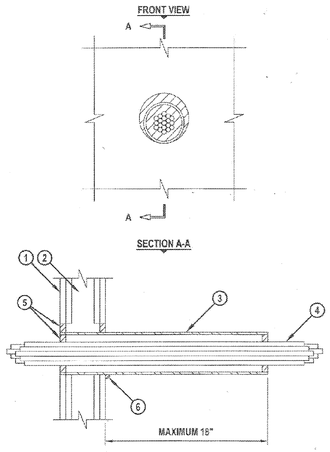
1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING):
   A. ANY LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
   B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
   A. MAXIMUM 10" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 10" NOMINAL DIAMETER CAST IRON PIPE.
   C. MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE OR TUBING.
   D. MAXIMUM 4" NOMINAL DIAMETER STEEL CONDUIT.
   E. MAXIMUM 4" NOMINAL DIAMETER EMT.
3. MINIMUM 3" THICKNESS MINERAL WOOL (MINIMUM 4 PCF DENSITY) TIGHTLY PACKED FOR NOMINAL 4" DIAMETER (AND SMALLER), AND MINIMUM 4" THICKNESS MINERAL WOOL (MINIMUM 4 PCF DENSITY) TIGHTLY PACKED FOR PIPES GREATER THAN NOMINAL 4" DIAMETER.
4. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT, CP 601S ELASTOMERIC FIRESTOP SEALANT, CP 604 SELF-LEVELING FIRESTOP SEALANT, OR CP 606 FLEXIBLE FIRESTOP SEALANT.
5. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT, CP 601S ELASTOMERIC FIRESTOP SEALANT, OR CP 606 FLEXIBLE FIRESTOP SEALANT APPLIED AT POINT OF CONTACT. (NOT REQUIRED WHEN CP 604 SELF-LEVELING FIRESTOP SEALANT IS USED, ITEM NO. 4).

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 12".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-1/4".
3. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT, CP 601S ELASTOMERIC FIRESTOP SEALANT, OR CP 606 FLEXIBLE FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.
4. W-RATING APPLIES ONLY WHEN CP 601S ELASTOMERIC FIRESTOP SEALANT OR CP 604 SELF-LEVELING FIRESTOP SEALANT IS USED.

UL/cUL SYSTEM NO. W-L-3065

CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR.



UL/cUL SYSTEM NO. W-L-3065

CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR.

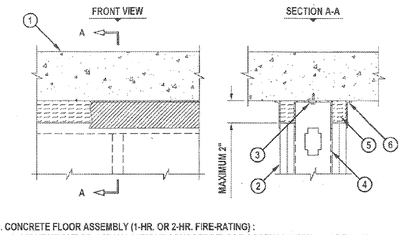
1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300, U400, OR V400) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. (NOT SHOWN) WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. [OPTIONAL] MAXIMUM 4" NOMINAL DIAMETER EMT, STEEL PIPE (SCHEDULE 5 OR HEAVIER) OR 28 GA. GALVANIZED STEEL SLEEVE, CAST INTO WALL WITH JOINT COMPOUND FLUSH WITH WALL SURFACES (SEE NOTE NO. 5 BELOW).
4. CABLE BUNDLE TO CONSIST OF ANY COMBINATION OF THE FOLLOWING :
   A. MAXIMUM 7/C NO. 12 AWG POWER CABLE WITH PVC JACKET.
   B. MAXIMUM 25 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
   C. RG/U COAXIAL CABLE WITH PVC JACKET.
   D. MAXIMUM 3/C NO. 8 AWG METAL-CLAD CABLE.
   E. MAXIMUM 3/C (+GROUND) NO. 8 AWG COPPER CONDUCTOR CABLE (ROMEX).
   F. MAXIMUM 5/8 DIAMETER FIBER-OPTIC CABLE WITH PVC JACKET.
   G. MAXIMUM 3/4" DIAMETER COPPER GROUND CABLE WITH OR WITHOUT PVC JACKET.
   H. MAXIMUM 1-1/4" DIAMETER SINGLE OR MULTIPLE CONDUCTOR TYPE MI CABLE (SEE NOTE NO. 4 BELOW).
5. MINIMUM 5/8" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT, CP 601S ELASTOMERIC FIRESTOP SEALANT, CP 606 FLEXIBLE FIRESTOP SEALANT OR CP 618 FIRESTOP PUTTY STICK.
6. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT, CP 601S ELASTOMERIC FIRESTOP SEALANT, CP 606 FLEXIBLE FIRESTOP SEALANT OR CP 618 FIRESTOP PUTTY STICK APPLIED AT WALL/SLEEVE INTERFACE WHEN STEEL SLEEVE EXTENDS BEYOND ONE OR BOTH SIDES OF WALL.

NOTES : 1. MAXIMUM DIAMETER OF OPENING WITH SLEEVE = 5-1/2".
2. MAXIMUM DIAMETER OF OPENING WITHOUT SLEEVE = 4".
3. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1".
4. A MINIMUM 1/8" SEPARATION SHOULD BE MAINTAINED BETWEEN MI CABLES AND ANY OTHER TYPES OF CABLE.
5. CABLES TO FILL MAXIMUM 45 % OF CROSS-SECTIONAL AREA OF OPENING.
6. WHEN SCHEDULE 5 STEEL PIPE OR EMT IS USED, SLEEVE MAY EXTEND UP TO 18" BEYOND WALL SURFACE.

UL/cUL SYSTEM NO. HW-D-0106

TOP OF WALL JOINT : 1-HR. OR 2-HR. GYPSUM WALL ASSEMBLY

ASSEMBLY RATING = 1-HR. OR 2-HR. (DEPENDING ON RATING OF WALL AND FLOOR ASSEMBLY)
CLASS II MOVEMENT CAPABILITIES = 20% COMPRESSION OR EXTENSION



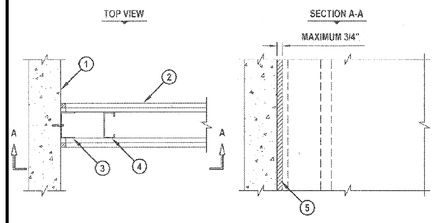
1. CONCRETE FLOOR ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING) :
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR ASSEMBLY (MIN. 4-1/2" THICK).
   B. ANY UL/cUL CLASSIFIED PRE-CAST HOLLOW CORE CONCRETE FLOOR ASSEMBLY (MIN. 6" THICK).
2. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U400 SERIES WALL) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
3. CEILING RUNNER (MIN. 25 GA., 3" FLANGES) FASTENED TO UNDERSIDE OF CONCRETE FLOOR (SEE NOTE BELOW).
4. STEEL STUDS (MIN. 2-1/2" WIDE), CUT 1/2" TO 3/4" LESS IN LENGTH THAN ASSEMBLY HEIGHT, NESTING IN CEILING RUNNER WITHOUT ATTACHMENT.
5. HILTI CP 767 SPEED STRIPS COMPRESSED 33% AND TIGHTLY PACKED INTO THE JOINT, FLUSH WITH BOTH SIDES OF WALL (SEE NOTE NO. 2 BELOW).
6. MINIMUM 1/8" (WET) THICKNESS HILTI CP 672 FIRESTOP SPRAY TO COMPLETELY COVER MINERAL WOOL AND TO OVERLAP A MINIMUM OF 1/2" ONTO GYPSUM AND CONCRETE FLOOR ON BOTH SIDES OF WALL.

NOTES : 1. AS AN ALTERNATE TO CEILING RUNNER IN ITEM NO. 3, CEILING RUNNERS, MANUFACTURED BY SLIPTRACK SYSTEMS, METAL-LITE, TOTAL STEEL SOLUTIONS. OR THE STEEL NETWORK. MAY BE USED. WHEN ALTERNATE CEILING TRACKS ARE USED, CONSULT THE UL FIRE RESISTANCE DIRECTORY FOR INSTALLATION INSTRUCTIONS.
2. AS AN ALTERNATE TO HILTI CP 767 SPEED STRIPS, MINERAL WOOL (MIN. 4 PCF DENSITY) COMPRESSED 33% MAY BE USED.

UL/cUL SYSTEM NO. WW-D-0040

WALL TO WALL JOINT : GYPSUM WALL TO CONCRETE OR BLOCK WALL ASSEMBLY

ASSEMBLY RATING = 1-HR. OR 2-HR.
CLASS II MOVEMENT CAPABILITY - 17 % COMPRESSION OR EXTENSION



1. CONCRETE WALL ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING) :
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 4-1/2" THICK).
   B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
3. WALL RUNNER (MINIMUM 25 GA.) SECURED TO WALL ASSEMBLY WITH STEEL CONCRETE FASTENERS (SPACED 12" O.C.).
4. STEEL STUDS (MINIMUM 3-1/2" WIDE), CUT 1/2" TO 3/4" LESS IN LENGTH THAN ASSEMBLY HEIGHT, NESTING IN CEILING RUNNER WITHOUT ATTACHMENT. FIRST STUD ADJACENT TO CONCRETE WALL SHALL NOT EXCEED 4" FROM WALL FACE.
5. MINIMUM 5/8" DEPTH HILTI CP 601S ELASTOMERIC FIRESTOP SEALANT OR CP 606 FLEXIBLE FIRESTOP SEALANT.

GENERAL FIRE STOP ASSEMBLY NOTES

1. NOTIFY ARCHITECT AND DBA INSPECTOR OF COMPLETION OF FIRE STOPPING INSTALLATION FOR REVIEW PRIOR TO THE APPLICATION OF GYPSUM BOARD.

Stocks Mann Architects, PLC
401 W. CAPITOL, SUITE 402
LITTLE ROCK, AR 72201
501-370-9207 501-370-9208 (FAX)

CONSULTANTS

DCI, Inc.
Civil Engineer

ROBBINS ENGINEERING
Structural Engineer

TME, LLC.
MEPF Engineer

STOCKS - MANN ARCHITECTS PLC REGISTERED ARCHITECTS No.LL-1 ARKANSAS
7-1-16

Fire Station Renovation and Police Station Addition

Buliding 7200 - Camp Joseph T. Robinson
North Little Rock, Arkansas

REVISIONS

ISSUE DATE
JULY 1, 2016

PROJECT NO.
0901U

CONTENTS
FIRE STOP ASSEMBLY SHEET

SHEET NUMBER
G1.3