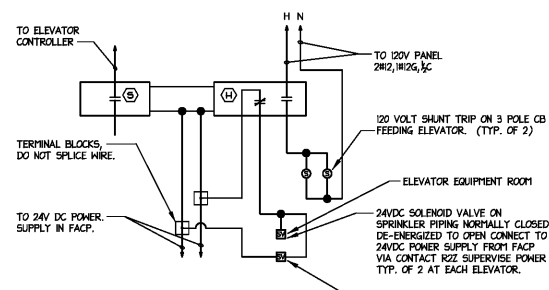


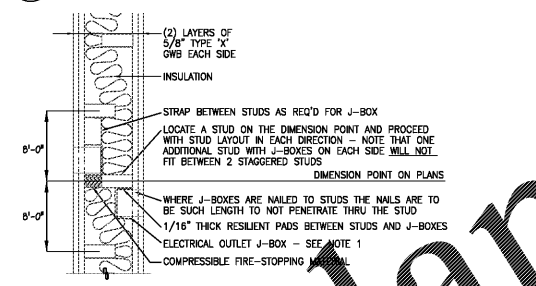
- NOTES:**
- CONNECT TO 120V CIRCUIT. SEE PLANS FOR EXACT CIRCUIT DESIGNATION.
 - COORDINATE EXACT LOCATION OF ALL DEVICES WITH THE ELEVATOR SHOP DRAWINGS.
 - MOUNT SMOKE AND HEAT DETECTORS WITHIN 2'-0" OF SPRINKLER HEADS. SMOKE DETECTORS SHALL, UPON ALARM, RECALL ELEVATOR TO THE APPROPRIATE LEVEL, AND LOCK OUT ELEVATOR VIA ELEVATOR EQUIPMENT. HEAT DETECTORS SHALL CONTROL MAIN ELEVATOR POWER. SEE ELEVATOR FIRE ALARM SHUTDOWN CONTROL SCHEMATIC. HEAT DETECTORS SHALL HAVE A LOWER RESPONSE TIME INDEX (RTI) COMPARED TO THE SPRINKLER HEADS IN THE HOISTWAY.
 - WHERE HOISTWAY IS NOT SPRINKLERED, DO NOT PROVIDE SMOKE OR HEAT DETECTORS WITHIN THE HOISTWAY.
 - LOCATE PIT LIGHT SWITCH AND CONVENIENCE RECEPTACLE TO ACCESS DOOR.
 - LIGHTS SHALL NOT BE CONNECTED TO THE LOAD SIDE TERMINALS OF THE CONVENIENCE RECEPTACLE.
 - MOUNT CENTERED IN ELEVATOR MACHINE ROOM.
 - MOUNT IN ELEVATOR LOBBY AT EACH LEVEL WITHIN 15'-0" OF DOOR.

1 ELEVATOR HOISTWAY DETAIL
DIAGRAMMATIC ONLY



- NOTES:**
- SMOKE DETECTOR SHALL, UPON ALARM, RECALL ELEVATOR TO THE DESIGNATED FIRST FLOOR, AND LOCK OUT ELEVATOR VIA ELEVATOR EQUIPMENT. HEAT DETECTOR SHALL BE FIXED TYPE WITH 30' SETTING AND WHEN IN ALARM IT ACTIVATES 120V SHUNT-TRIP TO ELEVATOR FEEDER BREAKER WITHIN PANEL. ALL DISCONNECTS SERVING ELEVATOR MOTOR CONTROLLER AND ELEVATOR CAB LIGHTS SHALL BE NFPA 3R CONSTRUCTION WITH EMBOSSED CONDUIT MARKS.
 - HEAT DETECTOR WITHIN ELEVATOR EQUIPMENT ROOM SHALL BE CONNECTED TO A DEDICATED FIRE ALARM ZONE SERVING THIS ROOM ONLY. THE SMOKE DETECTOR SHALL BE CONNECTED TO A SEPARATE DEDICATED FIRE ALARM ZONE.

2 PENETRATION DETAIL
NO SCALE

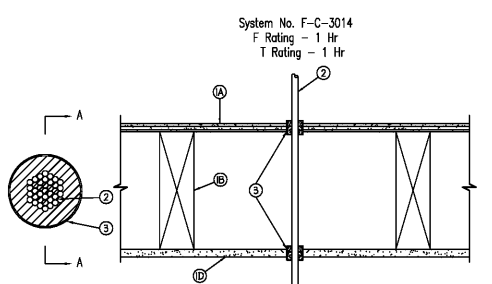


- 1. Wall Assembly** - The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
- Shade - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
 - Gypsum Board - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 3 in. The hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
 - Fill, Void or Conduit Material - Sealant - Installed to completely fill the annular space between the cables and gypsum wallboard on both sides of wall.

3 PENETRATION DETAIL
NO SCALE

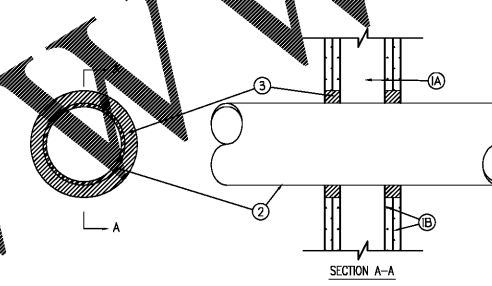
- 2. Cable** - Max two 3/4 in. ground No. 2/0 AWG aluminum or copper type SER cable with polyethylene (PE) insulation. Cable to be rigidly supported to both sides of wall assembly. The annular space between the cables and the periphery of opening shall be min 1/2 in. to max 1-1/2 in.
- 3. Fill, Void or Conduit Material** - Sealant - Installed to completely fill the annular space between the cables and gypsum wallboard on both sides of wall.
- 4. Fill, Void or Conduit Material** - Putty - Min 5/8 in. thickness of fill material applied within annulus flush with both surfaces of wall. Fill material to be forced into interstices of cable bundle to the max extent possible on both surfaces of wall. Additional fill material to be installed such that a min 1/4 in. crown is formed around the cable bundle and top edge over the steel studs.

4 PENETRATION DETAIL
NO SCALE



- 1. Wall Assembly** - The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
- Shade - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.
 - Gypsum Board - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 14-1/2 in. for wood stud walls.
- The F Rating of the Firestop System is equal to the fire rating of the wall assembly.**
- Through-Penetrants - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. An annular space of min 1/4 in. to max 2-1/4 in. is required within firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
 - Steel Pipe - Nom. 30 in. diam. (or smaller) schedule 10 (or heavier) steel pipe.
 - Iron Pipe - Nom. 30 in. diam. (or smaller) cast or ductile iron pipe.
 - Conduit - Nom. 4 in. diam. (or smaller) steel electrical metallic tubing or 6 in. diam. steel conduit.
 - Copper Tubing - Nom. 6 in. diam. (or smaller) Type L (or heavier) copper tubing.
 - Copper Pipe - Nom. 6 in. diam. (or smaller) regular (or heavier) copper pipe.
 - Fill, Void or Conduit Material - Sealant - Min 5/8 in. or 1-1/4 in. thickness of fill material applied within the annulus, flush with both surfaces of wall for 1 or 2 hr walls, respectively. At the point contact location between pipe and wall, a min 1/2 in. diam. bead of fill material shall be applied at the pipe covering wall interface on both surfaces of wall.

4 PENETRATION DETAIL
NO SCALE

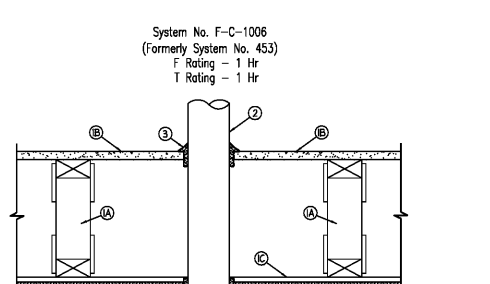


- 1. Electrical Outlets and Similar Boxes** - For phone, etc. in party walls must be sealed with MPP-4S fire barrier gummy pad or equal. Stack multiple boxes vertically when on same side of wall.
- 2. Contractor to verify the availability of this detail with local construction or building inspector.**

5 OUTLET J-BOX DETAIL
NTS

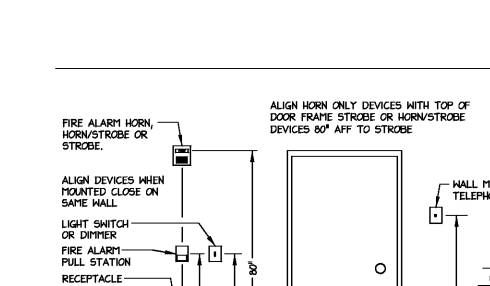
- 1. Wall Assembly** - The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
- Shade - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.
 - Gypsum Board - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 14-1/2 in. for wood stud walls.
- The F Rating of the Firestop System is equal to the fire rating of the wall assembly.**
- Through-Penetrants - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. An annular space of min 1/4 in. to max 2-1/4 in. is required within firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
 - Steel Pipe - Nom. 30 in. diam. (or smaller) schedule 10 (or heavier) steel pipe.
 - Iron Pipe - Nom. 30 in. diam. (or smaller) cast or ductile iron pipe.
 - Conduit - Nom. 4 in. diam. (or smaller) steel electrical metallic tubing or 6 in. diam. steel conduit.
 - Copper Tubing - Nom. 6 in. diam. (or smaller) Type L (or heavier) copper tubing.
 - Copper Pipe - Nom. 6 in. diam. (or smaller) regular (or heavier) copper pipe.
 - Fill, Void or Conduit Material - Sealant - Min 5/8 in. or 1-1/4 in. thickness of fill material applied within the annulus, flush with both surfaces of wall for 1 or 2 hr walls, respectively. At the point contact location between pipe and wall, a min 1/2 in. diam. bead of fill material shall be applied at the pipe covering wall interface on both surfaces of wall.

6 PENETRATION DETAIL
NO SCALE



- 1. Floor-Ceiling Assembly** - The 1 hr fire rated wood joist, wood truss or combination wood and steel truss floor-ceiling assembly shall be constructed of the materials and in the manner described in the individual L500 Series Design in the UL Fire Resistance Directory, as summarized below:
- Joints or Trusses - Nom 2 by 10 in. lumber joints, min 12 in. deep parallel chord trusses fabricated from nom 2 by 4 in. lumber in conjunction with gyp steel trusses or "Structural Wood Members" with bridging as required.
 - Flooring - Nom 3/4 in. thick plywood flooring with or without floor Topping Members, diam of opening is 5 in.
 - Furring Channels - Rigid or resilient gyp steel furring channels installed perpendicular to bottom chord of trusses.
 - Gypsum Board - Nom 4 5/8 in. thick, screw-attached to furring channels. Max diam of opening is 1-1/4 in.
- 1.1 Chose Wall** - (Optional) - The fire-rated penetrants (Item No. 2) may be through a 1 hr fire-rated gypsum wallboard/stud wall assembly in conjunction with a chose wall constructed of the materials and in the manner specified in the individual U300 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
- Shade - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
 - Gypsum Board - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 3 in. The hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
 - Fill, Void or Conduit Material - Sealant - Installed to completely fill the annular space between the cables and gypsum wallboard on both sides of wall.

4 PENETRATION DETAIL
NTS



- 1. Wall Assembly** - The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
- Shade - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
 - Gypsum Board - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 3 in. The hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
 - Fill, Void or Conduit Material - Sealant - Installed to completely fill the annular space between the cables and gypsum wallboard on both sides of wall.

4 PENETRATION DETAIL
NO SCALE

- 1. Wall Assembly** - The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
- Shade - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.
 - Gypsum Board - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 14-1/2 in. for wood stud walls.
- The F Rating of the Firestop System is equal to the fire rating of the wall assembly.**
- Through-Penetrants - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. An annular space of min 1/4 in. to max 2-1/4 in. is required within firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
 - Steel Pipe - Nom. 30 in. diam. (or smaller) schedule 10 (or heavier) steel pipe.
 - Iron Pipe - Nom. 30 in. diam. (or smaller) cast or ductile iron pipe.
 - Conduit - Nom. 4 in. diam. (or smaller) steel electrical metallic tubing or 6 in. diam. steel conduit.
 - Copper Tubing - Nom. 6 in. diam. (or smaller) Type L (or heavier) copper tubing.
 - Copper Pipe - Nom. 6 in. diam. (or smaller) regular (or heavier) copper pipe.
 - Fill, Void or Conduit Material - Sealant - Min 5/8 in. or 1-1/4 in. thickness of fill material applied within the annulus, flush with both surfaces of wall for 1 or 2 hr walls, respectively. At the point contact location between pipe and wall, a min 1/2 in. diam. bead of fill material shall be applied at the pipe covering wall interface on both surfaces of wall.

7 PENETRATION DETAIL
NO SCALE

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DEC 7, 2018
DRAWING NUMBER = C-2130

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COMMUNICATIONS INFRASTRUCTURE
DB CONSULTING
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REVISIONS

DATE DECEMBER 7, 2018
PROJECT NUMBER 9197-1000

SHEET TITLE
DETAILS

SHEET NUMBER
E-303

Order Plans