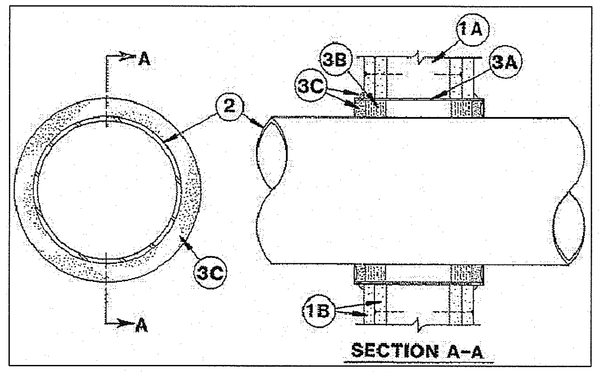
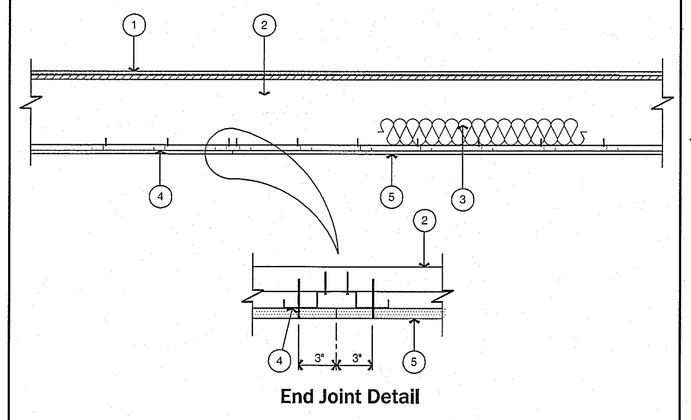


System No. W-L-1003
F Rating - 1 and 2 Hr.
T Rating - 0 Hr.

1. Wall Assembly The 1 or 2 hour 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:
   A. Studs - 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 with nom. 2 by 4 lumber end plates and cross braces. Steel studs to be min. 3 1/2 in. wide by 1 3/8 in. deep channels spaced max. 24 in. OC.
   B. Gypsum Board - No. 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layer, fastener type and sheet orientation shall be as specificed in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max. diam. of openings is 15 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.
2. Throught-Penetrant - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The spacing between pipes, conduits or tubing and the steel sleeve (Item 3A) shall be min. 0 in. (point contact) to max. 2 3/8 in. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits and tubing may be used.
   A. Steel Pipe - Nom. 12 in. diam. (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe - Nom. 12 in. diam. (or smaller) service weight (or heavier) cast iron soil pipe, nom. 12 In. diam. (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.
   C. Conduit - Nom. 6 in. diam. (or samller) steel conduit or nom. 4 in. diam. (or smaller) steel electrical metallic tubing.
   D. Copper Tubing - Nom. 6 in. diam. (or smaller) Type L (or Heavier) copper tubing.
   E. Copper Pipe - Nom. 6 in. diam. (or smaller) Regular (or heavier) copper pipe.
3. Firestop System - Installled symmetrically on both sides of wall assembly. The details of the firestop system shall be as follows:
   A. Steel Sleeve - Cylindrical sleeve fabricated from min. 0.019 in. thick (No. 28 gauge) galv. sheet steel and having a min. 2 in. lap along the longitudinal seam. Length of steel sleeve to be equal to thickness of wall plus 1 to 4 in. such that, when installed, the ends of the sleeve will project approximately 1/2 to 2 in. beyond the surface of the wall on both sides of the wall assembly. Sleeves installed by coilling sheet steel to a diam. smaller than the through opening, inserting the coil through the openings and releasing the coil to let it uncoil against the circular cutouts in the gypsum wallboard layers.
   B. Packing Material - Min. 1 In. thickness of mineral wool batt insulation firmly packed into steel sleeve on both sides of the wall assembly as permanent forms. Packing material to be recessed min. 2 1/2 in. from end of steel sleeve (flush with or recessed into gypsum wallboard surface) on both sides of wall assembly.
   B1. Packing Material - (not shown) - As an alternate to Item B, nom. 1 in. thick polyethylene backer rod may be used. The backer rod is to be recessed within the steel sleeve a min. of 1 in. from each surface of wall.
   C. Fill, Void or Cavity Materilas - Caulk or Sealant - When mineral wool batt insulation is used, applied to fill the steel sleeve to a min. depth of 1/2 in. on both sides of wall assembly. When backer rod is used, a min. thickness of 1 in. of CP-25WB+ caulk is required flush with surface of wall. A nom. 1/4 in. diam. continuous bead of caulk shall be applied around the circumferance of the steel sleeve at its egress from the gypsum wallboard layers on both sides of the wall assembly.
   3M COMPANY - CP 25WB+ or FB-3000 WT bearing the UL Classification Mark

CONDUIT / PIPE PENTRATION N.T.S. 3

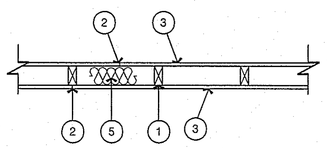


End Joint Detail

U. L. System No. L502
Unrestrained Assembly Rating - 1 Hr.
Finish Rating - 22 Min.

1. Flooring System - The flooring system shall consist of the following:
   Subflooring - Min., 23/32 In., thick plywood with T & G edges along the 8 ft., sides and exterior glue or nonveneer APA Sturd-I-Floor T & G panels per APA specification PRP 108. Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft.. Plywood or panels secured to trusses with construction adhesive and No. 6d ring shank nails spaced 12 in., o.c. along each truss. Staples having equal or greater withdrawal and laterial resistance strength may be substituted for the 6d nails.
   Floor Mat Material - Floor mat material nominal 1/4 in., loose laid over subfloor. Floor topping thickness shall be specified under Floor Topping Mixture.
   United States Gypsum Co. - Levelrock Brand Floor Underlayment SRM-25
   Finish Flooring - Floor Topping Mixture - Min., 1/2 In., thickness of floor topping mixture having a min., compressive strength of 3000 psi. Refer to manufacturer's instructions acompanying the material for specific mix design.
2. Wood Joists - Min. 2 by 10, spaced 16" o.c. and effectively fireblocked in accordance with local codes.
3. Batts and Blankets - Glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Restiance. Insulation shall be min., 3-1/2 in., thick non faced R-13 and shall be secured againts the subflooring with stapples at 12 in., o.c., or held suspended in the concealed space with 0.090 in., diameter galvanized steel wires attached to the wood trusses at 12 in., o.c.,
4. Resilient Channels - Formed from min., 0.020 in., thick galvanized steel, 1/2 in., deep by 2-3/8 in., wide at the base and 1-3/8 in., wide at the face, spaced 16 in., o.c. perpendicular to the trusses. When insulation is applied over the resilient channel/ gypsum panel ceiling membrane, the resilient channels spacing shall be reduced to 12 in., o.c. Channesl secured to each truss with 1 -1/4 in., long Type S bugle head steel screws. Channels overlapped 4 in., at splices. Two channels, spaced 6 in., o.c., oriented opposite each gypsum panel end joint as shown in the above illustration. Additional channels shall extend min., 6 in., beyond each side edge of panel.
5. Gypsum Board - Nominal 5/8 in., 48 in., wide gypsum panels. When resilient channels (Item 4) are used, gypsum panels installed with the long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in., long Type S bugle head steel screws spaced 12 in., o.c. located a min., 1/2 in., from side joints and 3 in., from end joints. When insulation is applied over the resilient channel/gypsum panel ceiling membrane the screw spacing shall be reduced to 8 In., o.c. End joints secured to both resilient channel as shown in end joint detail.

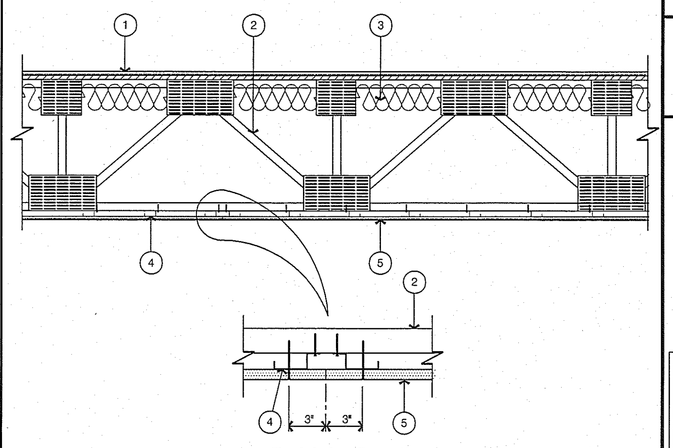
ONE HOUR FIRE RATED FLR. / CLG. N.T.S. 4



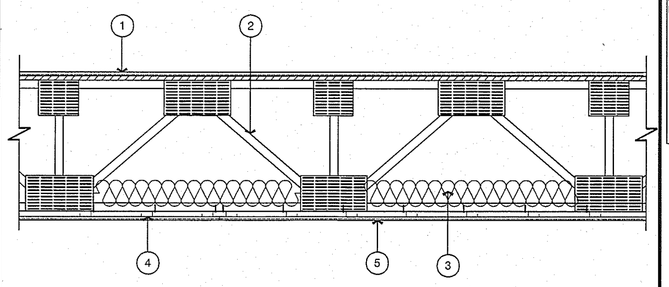
U. L. System No. U305
Bearing Wall Rating - 1 Hr.
Finish Rating - See Item 3

1. Wood Studs: Nominal 2 by 4 in., spaced 16 o.c. max., effectively firestopped.
2. Joints and Nailheads Exposed or covered with fiber tape and joint compound, except where required for specific edge configuration. For tapered, rounded edge gypsum board, joints covered with joint compound or fiber tape and joint compound. As an alternate, nominal 3/32 In., thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced. Nailheads exposed or covered with joint compound.
3. Gypsum Board - 5/8 in., paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in., o.c. with 6d cement coated nails 1-7/8 in., long, 0.0915 in., shank diameter and 15.64 in., diameter heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
   American Gypsum Co. -Types AGX-1 (finish rating 23 min.), Type AGX-11 (finish rating 26 min.), or Type AG-C
   Georgia-Pacific Gypsum LLC - Type 5 (finish rating 26 min.), Type 6 (finish rating 23 min.), Type 9 (finish rating 26 min.), Type C (finish rating 26 min.), Type DGG (finish rating 20 min.), Type GPFS1 (finish rating 20 min.), Type GPFS2 (finish rating 20 min.), Type GPFS6 (finish rating 26 min.), Type DS, Type DAP, Type DD (finish rating 20 min.), DA, DAPC.
   National Gypsum Co. - Type FSK (finish rating 20 min.), Type FSK-G (finish rating 20 min.), Type FSW (finish rating 20 min.), Type FSW-2 (finish rating 24 min.), Type FSW-3 (finish rating 20 min.), Type FSW-5 (finish rating 22 min.), Type FSW-G (finish rating 20 min.), Type FSK-C (finish rating 20 min.), Type FSW-C (finish rating 20 min.), Type FSMR-C, Type FSW-6 (finish rating 20 min.).
   United States Gypsum Co. - Type AR (finish rating 24 min.), Type SCX (finish rating 24 min.), Type C (finish rating 24 min.), Type WRX (finish rating 24 min.), Type WRC (finish rating 24 min.), Type IP-X1 (finish rating 24 min.), Type FCV (finish rating 24 min.), Type IP-X2 (finish rating 24 min.), Type SHX (finish rating 24 min.), Type SCX (finish rating 24 min.), Type IP-AR (finish rating 24 min.), Type IPC-AR (finish rating 24 min.),
3A. Gypsum Board - 5/8 in., paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in., longg Type W coarse threaded gypsum panel steel screws spaced a max. 8 in., o.c. with last screw 1 in., from edge of board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
   American Gypsum Co. -Types AGX-1 (finish rating 23 min.), Type AG-C (finish rating 26 min.).
   United States Gypsum Co. - Type AR (finish rating 24 min.), Type SCX (finish rating 24 min.), Type C (finish rating 24 min.), Type WRX (finish rating 24 min.), Type WRC (finish rating 24 min.), Type IP-X1 (finish rating 24 min.), Type FCV (finish rating 24 min.), Type IP-X2 (finish rating 24 min.), Type SHX (finish rating 24 min.), Type PRX-G (finish rating 24 min.), Type IP-AR (finish rating 24 min.), Type IPC-AR (finish rating 4 min.).
4. Steel Corner Fasteners - (Optional) - For use at wall corners. Channel shaped, 2 in., long by 1 in., high on the back side with two 1/8 in., wide cleats protruding into the 5/8 in., wide channel, fabricated from 24 gauge galv., steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in., from the corner of gypsum board, max. spacing 16 in., o.c. Nailed to adjacent stud through tab using one 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using 6d cement coated nails.
5. Batts and Blankets - (Optional) Glass fiber or mineral wool insulation. Place to completely or partially fill stud cavities.

ONE HOUR FIRE RATED PARTITION N.T.S. 1



End Joint Detail



Alternate Insulation Placement

U. L. System No. L550
Unrestrained Assembly Rating - 1 Hr.
Finish Rating - 23 Min.

1. Flooring System - The flooring system shall consist of the following:
   Subflooring - Min., 23/32 In., thick plywood with T & G edges along the 8 ft., sides and exterior glue or nonveneer APA Sturd-I-Floor T & G panels per APA specification PRP 108. Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft.. Plywood or panels secured to trusses with construction adhesive and No. 6d ring shank nails spaced 12 in., o.c. along each truss. Staples having equal or greater withdrawal and laterial resistance strength may be substituted for the 6d nails.
   Floor Mat Material - Floor mat material nominal 1/4 in., loose laid over subfloor. Floor topping thickness shall be specified under Floor Topping Mixture.
   United States Gypsum Co. - Levelrock Brand Floor Underlayment SRM-25
   Finish Flooring - Floor Topping Mixture - Min., 1/2 In., thickness of floor topping mixture having a min., compressive strength of 3000 psi. Refer to manufacturer's instructions acompanying the material for specific mix design.
2. Trusses - Parallel chord trusses, spaced a max., of 24 in., o.c. fabricated from nominal 2 by 4 lumber, with lumber oriented vertically or horizontally. Min., truss depth is 12 in., Truss members secured together with min. 0.0356 in., thick galvanized steel plates. Plates to have 5/16 in., long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by same punch), forming a split tooth type plate. Each tool has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each has a twist for stiffness. The pairs are repeated on approx., 7/8 in., centers with four rows of teeth per inch of plate width.
3. Batts and Blankets - Glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Restiance. Insulation shall be min., 3-1/2 in., thick non faced R-13 and shall be secured againts the subflooring with stapples at 12 in., o.c., or held suspended in the concealed space with 0.090 in., diameter galvanized steel wires attached to the wood trusses at 12 in., o.c.
4. Resilient Channels - Formed from min., 0.020 In., thick galvanized steel, 1/2 in., deep by 2-3/8 in., wide at the base and 1-3/8 in., wide at the face, spaced 16 in., o.c. perpendicular to the trusses. When insulation is applied over the resilient channel/ gypsum panel ceiling membrane, the resilient channels spacing shall be reduced to 12 in., o.c. Channesl secured to each truss with 1 -1/4 in., long Type S bugle head steel screws. Channels overlapped 4 in., at splices. Two channels, spaced 6 in., o.c., oriented opposite each gypsum panel end joint as shown in the above illustration. Additional channels shall extend min., 6 in., beyond each side edge of panel.
5. Gypsum Board - Nominal 5/8 in., 48 in., wide gypsum panels. When resilient channels (Item 4) are used, gypsum panels installed with the long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in., long Type S bugle head steel screws spaced 12 in., o.c. located a min., 1/2 in., from side joints and 3 in., from end joints. When insulation is applied over the resilient channel/gypsum panel ceiling membrane the screw spacing shall be reduced to 8 In., o.c. End joints secured to both resilient channel as shown in end joint detail.

ONE HOUR FIRE RATED FLR. / CLG. N.T.S. 2

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PROJECT LOCATION

3034 OLD ATLANTA ROAD
CUMMING, GA 30041

Montessori Kids Academy

REVISIONS

U. L. ASSEMBLIES

DATE	PROJECT No.
8-17-09	29001

SHEET No.

FS1.0